The Builder.

SATURDAY, JANUARY 29, 1853.

OXFORD seems to be arousing itself, and bestowing attention on other subjects besides Greek and Latin, the excessive devotion to which Sydney Smith, so long ago as 1809, made the subject of complaint, handling it with that peculiar and trenchant humour which belonged to him. Whether the change was effected by his writings, or more recent ones, or is the result of the study of Mediæval, and still more, of Christian art, towards which the present phasis of the Oxford Theology has given a strong bias, it is bootless to inquire. Enough that such a change has taken place, of which the existence of the Art Society is a proof, before which not only have a course of lectures,* by Mr. Butler, been delivered, but we know that a gentleman has been brought from the commercial and naval city of Plymouth to discourse of art to the "learned Thebans" of Oxford. Nor is there any impropriety in this latter circumstance. Devonshire, and more especially the neighbourhood of Plymouth, possesses an atmosphere redolent of art, and has produced more eminent artists, perhaps, than any other county in England: the first distinguished president of the Royal Academy, and the present, and more learned, president of the Royal Academy, both claim Plymouth for their birthplace.

The lectures now before us were originally delivered to the members of the Durham Athenæum, and repeated at Oxford, and subsequently at Harrow, so that they have had a wide audience. Nor are they unworthy of such extensive diffusion; they manifest in the outset a regard for logical exactness and precision which are too often wanting in dissertations on art; and this is the more commendable, because it is clear that when the author chooses to give the rein to his courser, he can fleet away, as if mounted on a Pegasus. The imitative arts of which he treats are chiefly sculpture and painting, for of music he treats only in a supplementary address to the Durham Athenæum. A more prominent place is due to it, if it be that imitative art to which the greatest scope for originality is now offered, according to the notion promulgated by our late semitic Chancellor of the Exchequer, in what Southey would term his singular "inter-chapter" on the Jews, in his biography of Lord George Bentinck.

The other branches are necessarily treated of in a cursory manner, but sufficiently to inflame the hearers or readers with a desire for more information. A list of the works referred to is given at the commencement. Schelling's oration "On the Relation between the Plastic Arts and Nature," is cited: to those who cannot read the original German, or those who cannot procure Johnson's translation, in Chapman's "Catholic Series," it may be well to state that the essence of that oration is to be found in Coleridge's "Lectures on Shakespeare and other Dramatists," vol. ii. lecture xiii. "On Poesy or Art,"—the "general coincidence" between which and Schelling's discourse gave rise to Dequincey's captious imputation of wilful plagiarism on the part of Coleridge, and from which his memory was vindicated with so much learning and filial piety by his daughter, the late Mrs. Henry Nelson Coleridge. We observe that while Schiller's poems are cited, no reference is made to Schiller's "Letters on Æsthetics," though the translation of these forms also a part of the "Catholic Series."

* Principles of Imitative Art: Four Lectures, delivered before the Oxford Art Society, by George Butler, M.A. late Fellow of Exeter College, Secretary. Foolscap 8vo. pp. 206. London: Parker. 1853.

When treating of the statues and groups of Niobe, reference might have been made to "Fabroni's Dissertation sur les Statues appartenantes à la Fable de Niobe," Florence, 1779; nor would it have occupied much space to have given in a note a translation of the Greek epigram,—

> This female, so the poets sing,
> Was changed to stone by Dian's curse.
> The sculptor did a better thing,—
> He did exactly the reverse.

The work of Quatremère de Quincy, "An Essay on the Nature, the End, and the Means of Imitation in the Fine Arts," translated by J. C. Kent, might have been cited for the benefit of those who wish for more ample discussion on this head.

Our limits prevent us giving extended extracts. We pass over all that refers to the history of art, to give a specimen of the enlightened critical observations with which the work abounds:—

"The Niobe is characterised by a noble simplicity, by singleness of sentiment, and a certain severity of treatment which raises the subject—human suffering exemplified in a form of matchless beauty—above the level of ordinary nature, and almost to the divine ideal. If the sculptures in the pediment of the Parthenon represent to us the cycle of Olympian gods, and heroes descended from them, and may, therefore, be fitly compared to the Homeric epos, the group of the Niobe represents that portion of the cycle of mythology from which the subjects of dramatic poetry were taken, and we may compare it to the noblest specimens of the tragic drama, with which its aim is identical. Whilst in the Olympian gods the highest moral attributes were typified, in the group of the Niobe we find pathos raised to the highest possible level. A female character is rightly chosen for the representation of grief; since the expression of grief and passive endurance was looked upon by the Greeks as unworthy of a man, but suited to the female sex. The figure of Niobe would be raised above ordinary suffering nature, if not by the nobleness of the form, at all events by that of the attitude. The mother rises above the fear and pain of death. She is not merely beseeching, she is protecting—endeavouring, though vainly, to shield her youngest child, who flies to her for succour, and exhibiting the heroic power of self-sacrifice that exists in haughty and unsubdued natures; an idea never before so grandly expressed in sculpture, and only finding its parallel in the tragedies of Sophocles, where the self-devotion and endurance of which women's nature is capable are shown, not in the gentle and more feminine Ismene, but in the high-minded and daring Antigone."—P. 94.

The only thing we can venture to add to this is the interesting circumstance that when Guido was asked "Whence he drew the idea of those heads which seemed formed in Paradise?" He replied that he had had no other model of beauty than Niobe and her daughters.

Who can tell what may yet be the results of our fellow-countrymen having the opportunity of more freely contemplating even casts of these triumphs of artistic skill? This leads us to notice what has given us unqualified pleasure—the author's earnest advocacy of æsthetic culture, not among the rich only, but among our citizens and countrymen of every degree, by the establishment of schools of design and museums in provincial towns. "Is art, then," says he, "only of use in a religious point of view? No, art has another use, that of promoting our enjoyment of life in the additional pleasure we derive from the contemplation of external objects. * * * * This enjoyment of nature is very much heigthened by a cultivation of art; and as these gifts of the Creator are bestowed with a bountiful hand on all alike, it is our duty to provide that all, as much as possible, may profit by them. We cannot teach every mechanic, every tiller of the ground, the arts of design. They have no more time to practise them than we have to teach them. But we can provide for the construction of museums of art in all the provincial towns throughout the kingdom where collections might be formed, first of casts, then of pictures, as they might be presented. These museums would be always accessible to the inhabitants of the town, and to the countryman whenever his callings, on market or feast-days, brought him there," p. 179. It was precisely such casual visits as those now alluded to, which evoked the latent talent of Tassie, of Chantrey, and, we believe, of Forrest, whose recent loss Scotland has just cause to lament. The multiplication of museums, under Mr. Ewart's Act, will in all probability be followed by an increase of such gratifying instances.

By such means will be realised an important requisite for the artist—a jury of intelligent spectators. When properly educated, the people, when looking at a statue, will learn to discriminate between some dull piece of material stone—so dull that "we start! for life is wanting there,"—and a figure instinct with life and beaming with mind, which extorts a willing admiration, for, to use the words of the old dramatist,—

> "There is then a heavenly beauty in't; the soul moves in the superficies."

Nor do the humber classes alone need instruction in the principles of art; the higher are often the dupes of designing dealers, from whose specious practises a knowledge acquired in the study of the best models would protect them. Very appropriate are the remarks of Mr. Butler, in his concluding address before the Art Society of Oxford, with which we must end our extracts:—

"I need not begin by proving how desirable it is that an English gentleman should have some knowledge of the principles of art, by which he can at least judge of its productions, and take a part in conversations on subjects connected with art. I shall take that for granted. But I may be permitted to say in what relation, as I conceive, the study of art ought to stand to other studies pursued here. I would not claim too much time for that which has no right to our exclusive attention. Art is, as we have seen, a lesson for the ignorant, a recreation for the intellectual man, a necessity for the artist. What he feels he cannot help portraying. The practice of art is his daily food. It is to us the seasoning of the food, not the food itself. We hope to bear away from Oxford solid fruits of learning. Art is as the bloom which lends beauty to these fruits. Whatever acquirements we possess, whatever knowledge, will borrow an additional grace from its association with that pure artistic feeling which springs up in the minds of those who, with faith, and love, and perseverance, study the finest models that ancient and modern art have given us.

Most of those whom I am addressing have a great advantage in the study of art over ordinary students. They hold in their hands the key of those treasures which nothing short of a familiarity with ancient times and institutions can disclose."

How happy has been the effect of the application of ancient remains to the elucidation of one classic author is seen in the very splendid edition of "Horace" which Dean Milman has given to the world. Nor has the effect been less happy in the employment of ancient remains in the illustrated edition of Macaulay's "Ballads." But the whole domestic life of the ancient Greeks has been elucidated from the remains of antiquity by Panofka, a translation of whose work was published a few years ago by Newby, Mortimer-street.

We may here remark, the materials and subjects for statues, bassi-rilievi, and pictures, with which "Horace" abounds, was pointed out by Jani, in his edition (Leipsic, 1809, p. lxxii.), where he particularly specifies odes, b. ii. od. 18, l. 25; from which we learn that evictions were practised by Roman as well as Irish landlords.

M. Chateauneuf in the interesting volume edited by Lady Mary Fox, entitled the "The Country House," has suggested that the residences of our country gentlemen should bear some relation to the character of the pursuits and studies of their owners, and be Grecian or Gothic in their style, as the possessor might prefer Homer or Shakspeare. This he suspects may raise a smile, but it is interesting to know that respect has been paid to the principle involved, in the New High School, of Edinburgh, which is not the least pleasing of the buildings which adorn that classical city.

To conclude, we have learning, taste, and enthusiasm combined in Mr. Butler's book, to promote an object of great individual and national interest. We cannot doubt but that a taste for art will be more widely diffused than at any former time, when it is so zealously patronized and practised by the highest Personages in the realm, whose example is adopted in the best circles. Indeed, no one could have surmised how great is the feeling for art, and how exquisite the practical power, which exists among the aristocratic ranks, till the exhibition of the Amateurs' gallery disclosed the pleasing fact. Many works bear a like testimony which have emanated from the same sources. The "Babes in the Wood," by the Marchioness of Waterford; the "Book of Ruth," by the Ladies Cadogan; and "The Spanish Lady Love," by Lady Dalmeny, all evince high artistic skill. Humble in their pretensions, but not less attractive, are the several productions of E. V. B., especially the volume entitled "Child's Play," which, like those edited by Lady Mary Fox and the Ladies Cadogan, have for their motive the promotion of benevolent objects. May the results correspond with the intent!

A "Treatise on the Fine-Arts Section of the Great Exhibition," by Mr. Weekes, the sculptor, has been recently published.* Although its purposes are not ephemeral, there is much, of course, in it which would have been read with greater interest while the Exhibition was open. The criticisms on individual works of art are written in a spirit void of that offensive tone of strictures which is professionally adopted by some who are really incapable of appreciating the beauties and the merits even of a defective art-work. The author of the treatise under notice is of opinion that "a perception of beauties is more a proof of knowledge than a carping at defects; and that a just but merciful spirit of criticism will serve more to the advancement of good art than any observations resulting from personal friendship or party prejudice." The author's own criticisms, however, on individual art-works, constitute but a minor feature of his treatise, in which the origin of the fine arts has been touched upon and some of their history adverted to,—their value as a means of improvement and civilization dwelt upon,—their power over the mind discussed,—their principles set forth, to show them founded on solid reasonings, not on fanciful aberrations,—their encouragement advocated, and so on. The introduction is followed by a short chapter on modern British art up to the present time, in which the neglect of form and the ultra-attention to colour are pointed out as probably actuating the Exhibition Commissioners in their rejection of pictures and invitation of sculpture; on the latter of which subjects the longest and most interesting chapter of the treatise consists. This is followed up by one on the materials and processes used in the fine arts; a chapter on ornamental art in general; and some remarks on stained glass. The book is not very *deep*, and there are one or two passages which might tempt us to an angry rejoinder; but the liberal and generous spirit in which the author has treated the works of the majority of his contemporaries, Gibson, MacDowell, Bailey, Bell, Foley, Watson, Adams, Stephens, Edwards, &c. makes a strong demand on our admiration, and leads us to withhold objections that might justly be urged.

Sculptors greatly need an appreciating public. If proper encouragement were now discreetly given by the moneyed classes, we should soon see the British school of sculpture raised out of its present unsatisfactory condition.

* "The Prize Treatise on the Fine-Arts Section of the Great Exhibition of 1851; submitted to the Society of Arts in Competition for their Medal. By Henry Weekes, A.R.A. Virtually and Co. 135, Fleet-street, 1852.

ON A CERTAIN CLASS OF GALLO-BYZANTINE CHURCHES IN AND NEAR PERIGUEUX IN FRANCE.

In the course of some remarks on this subject read at the ordinary meeting of the Royal Institute of Architects, on the 10th inst. by Professor Donaldson, the reader said, his object was to invite attention to a peculiar class of monuments existing in France, which he would call by the name of Gallo-Byzantine, because they presented features closely connected with the architecture of Byzantium. For the latter he considered the term "Byzantine architecture" a good denomination; and it might in the first place be desirable briefly to trace the history of that style. About the year 330 of our era, the Emperor Constantine became a Christian, and removed the seat of empire from Rome to Byzantium, carrying with him the arts of Rome as they then existed, though in a state of decline from their ancient perfection. These arts, and that of architecture especially, became, in this new locality, mixed up with a new element of taste; inasmuch as the artists of that city retained in a great degree the traditions of the ancient Greeks, with respect to mouldings, plans, &c.; and from that period a mixed style was perceptible, having a strong feeling for Greek art, but presenting also other features belonging to a strange and foreign country. The ancient basilicas erected at that time in Rome and elsewhere retained the form now shown in St. Paul's without the Walls, at Rome, with some modifications.

It appeared that in Greece another style of art arose at the same time, and the Christian churches then erected had a peculiar character and impress of their own; distinct and different from those of Rome.

The great dome of the Pantheon was the earliest feature of that kind mentioned in the archives of architectural history; and was erected about the time of our Saviour's birth. The Pantheon was a portion originally of the Baths of Agrippa; and in the baths which were subsequently erected, the dome, as an architectural feature, was to be found: but in the basilicas of Rome the cupola did not form an essential part, as it did in a remarkable manner in the Christian churches erected in Greece. The dome, in fact, did not first appear in Eastern, but in Western Europe: yet the Romans, when Christianity was introduced, abandoned that great feature of their own invention, while the Greeks adopted it. And co-extensively with the progress of the Byzantine dominion, its architecture influenced the taste of Asia and Africa, and produced the Arab and Moorish styles.

The earliest Christian church of this description now remaining was that of Sta. Sophia, at Constantinople; built by Anthemius of Tralles, and Isidore of Miletus, under the Emperor Justinian, about the year 540. In the ground plan of this church the elements of the Greek cross might be traced.

The church of San Vitale, at Ravenna, erected about A.D. 550, presented an octagonal arrangement in its plan, without any trace of the elementary form of the cross. He did not know whether the invention or application of the form of the cross to the plans of churches was due to the Greeks or to the Romans. It was probably to be ascribed to the lively imagination of the former; and the Latins, who, without wishing directly to imitate the Greeks, but still desiring to retain the figure which had become sanctified in their eyes, were supposed to have elongated one of its arms, so as to constitute what was called the Latin cross. Ravenna was the seat of one of the exarchs of Italy, and a number of churches still existing near the south-east coast of Italy bore the original type of the Greek church.

Mr. Donaldson here referred to a plan of a Græco-Russian church, observing that the Russian empire, having adopted the Greek rite, which is still professed there, all their churches were built according to the canons of the Greek church; and probably the czars of Russia might be regarded as the successors of the emperors of Constantinople. He next referred to drawings of the cathedral of Ani (on which he had before read a paper at the Institute). There the element of the Greek cross was retained, though the building was not erected till the year 1010. The pointed arch was also found there at a much earlier date than in this country. Of the date of the cathedral of Ani there could be no doubt, because the city was destroyed before the pointed arch appeared in northern Europe.

The next building referred to was the church of Lycodimo, at Athens, which presented a peculiarity of section, with a series of small windows at the springing of the dome. This was also a peculiar feature in the church Sta. Sophia, and also in the mosque of Sultan Achmet, at Constantinople, which displayed, much more than Sta. Sophia, the original type of the Greek church.

The church of St. Mark, at Venice, was built on the Greek type at the latter end of the tenth century. There the arms of the cross were quite equal, the central dome rose from four large piers, and there were four other domes at equal distances from the central one. That over the western entrance was as large as the central one, but the other three were smaller. The more ornamental parts of the church were admitted to be of a later period.

Some years ago he had been applied to by the publishers of the work called "Monumens Anciens et Modernes," to superintend the translation and publication of an English edition. Among the subjects illustrated in that work was the church of St. Front, at Perigueux. Having been himself for many months in Greece, he was struck with its resemblance to the churches of that country. A recent work published on "Byzantine Architecture in France," by M. Felix de Verneilh, treated not only of the church of St. Front, but showed that there were also in France a great number of churches of the same character, all of them being within a certain district in the south-western part of the country.

When the national taste in France most unpectedly restored to favour and acceptance the arts of the Middle Ages, a long-established and deeply-rooted belief was peculiarly prevalent. Since the Renaissance it had been customary to consider that in point of art France could not claim any initiative; that she had always imitated, never created; that she had always received impulse without ever imparting it. As, then, it became necessary to name for the first time the principal styles into which the monuments of ancient France are divided, and to assign them to an origin, that, characterized by the full semicircle, was at first described as coming direct from the East, and very naturally received the name of Byzantine.

A certain analogy exists between the churches of the ancient Greek Empire and those which were built in France in the eleventh and twelfth centuries; an analogy which, although not very complete in all its details and consequences, authorizes the classifying them under one modified name, and attributing them to one common type. To call so many of these buildings purely Byzantine could only arise from those edifices in the east of Europe being so little known.

Byzantine architecture is the architecture of the ancient Greek empire. The Byzantine churches are those of a date later than Justinian, which were built wherever the power of the Greek emperors extended,—wherever Byzantine civilization prevailed. Such are St. Vitale, at Ravenna, and St. Mark, at Venice, and even the more recent churches of Russia: because at the time when St. Vitale and St. Mark were built, Ravenna, and likewise Venice, had not yet broken through all the ties which attached them to the Greek empire; and because Russia, in reality, is the inheritor of that empire, and the

present possessor of her power. Whatever these edifices have in common among them and peculiar to themselves, as distinguished from other Christian buildings, that which assigns them a place and a style distinct and peculiar in the history of architecture, is, above all, the cupola. All these erections, and, with infinitely few exceptions, they alone, in Christian architecture, have the cupola as their chief type: the cupola is not in these an accident,—a simple modification of the vault, as in the churches of the West, where it is little shown but at the base of towers, and sometimes at the intersection of the naves: but it is constantly and systematically employed, and the cupola forms the basis of all Byzantine architectural combination.

Now there exist in the heart of the central provinces of France such edifices as the above. Without root in that country, isolated in the national taste, they appear, in spite of their rudeness and simplicity, to reveal clearly and incontestably an Eastern origin. These are the buildings in which the cupola always forms, as in the Greek churches, the basis of architectural combination, and are those to which I propose to call your attention.

Already a learned architect, a traveller in the East, M. Albert Lenoir, had remarked, at first casually, and subsequently with emphasis, in a public course of lectures, the eminently Byzantine physiognomy of the churches of Cahors and Souillac: he placed in the same rank the church of St. Stephen of Périgueux, which he knew only by a bad engraving. Now by patient researches, pursued during six years, M. Felix de Verneilh proved the existence of more than forty monuments, all bearing in different degrees the impress of the same style,—all of the same family: but the oldest, the largest, the most complete, and the most curious of all is the ancient abbey of St. Front, now the cathedral of Perigueux. The basilica of St. Front struck him very forcibly. By the Greek cross of its plan, by its paved terraces, by its five cupolas entirely disengaged from its primitive roof; finally, by the purity and unity of its style, it proclaimed a relationship with the religious edifices of the East, remarkably close and direct. He proceeded to compare it with the chief examples of the latter, and, to his great astonishment, there was one, the celebrated basilica of St. Mark, Venice, the plan, form, and almost the dimensions of which, it reproduces. St. Front was in some sort but the copy of St. Mark's. This was a fact without parallel, and of high importance in the history of the art; and he determined to study it in all its details and all its consequences.

To show how a Byzantine type was introduced entire into French architecture, to state at what time, under what circumstances, and with what modifications, is to write a history of St. Front.

To explain, then, how this Byzantine element developed itself, how modified, and to what extent it was combined with the national architecture, to pursue it in all the edifices which are impregnated with it, even to the poorest and the most obscure, is to treat of Byzantine architecture in France; for, strange to say, all the Byzantine edifices of France, or (which is the same thing) all buildings with cupolas actually existing in France, were built in the neighbourhood, and in imitation, of St. Front, which takes the lead and explains them. Not any of them has extended beyond the limits of old Aquitaine, although the influence of the cupolas of Fontevrault are felt in the Romanesque and first pointed style of the whole of Anjou; and even this influence by no means prevails throughout all parts of that vast region of the south-west. None are found to the south of the Garonne, that is to say, to the south of Aquitaine. In the north, and immediately on this side of the Loire in the east, they are very thinly scattered. It is in the centre in the west, in the dioceses of Perigueux, Angoulême, Cahors, and Scintes, that almost all of them are concentrated. Churches are not necessarily Byzantine, because they possess cupolas, for not all vaults of this kind are imitated from those of the East; the distinction is in the form of the pendentives. No, cupolas with pendentives of a spherical form need further investigation. In Périgord and Angoumois such are innumerable. They decidedly form a distinct series. But this distinction having been made, it was important, without otherwise disregarding any building with a series of cupolas, at least to discover all those which were very old or very worthy of remark. These might offer some further insight, some light at first unperceived, so as fully to enable us to understand the ramification and development of this class of edifice in France.

There were many towns in France which contained edifices of the kind thus described;* and a comparison of the ground plan of St. Front with that of St. Mark's, Venice, would show their striking similarity. There was an equally remarkable coincidence in the date of their erection. The first stone of the present St. Mark's was laid in the year 977, and the whole of the eleventh century was occupied in completing it and its embellishments. The monastery and other edifices, and the church of St. Front, at Perigueux, were commenced in the year 984, by Bishop Frotaire, the superior of the church, who died in the year 991;—therefore there was a difference of only seven years in the dates of foundation of the two churches. After Frotaire, Martin carried on the works at St. Front; he died A.D. 1000, and A.D. 1047 the monastery was dedicated by Gerand de Gourdon. The main piers of St. Mark's were hollowed out and lightened, just as Sir C. Wren had lightened the piers of St. Paul's in comparison with those of St. Peter's. Above the piers of St. Front were pointed arches, and above those the dome. In the fourteenth century a chapel was added to St. Front by one of the bishops, and there was every reason to believe that it had taken the place of an absidal end. The tower was of a later period than the church, but it was the most ancient tower existing in France. The inside drum of the cupolas rises clear and distinct above the roof, and is then covered with the external cupola. The stone-work does not now appear, but the author of the French work referred to, states that he examined the construction and found it to be of stone, beneath the present tiling; the tiles having been used as cheaper than the reparation of the stone roof.

From the striking resemblance of St. Front to St. Mark's, the author last referred to supposed that St. Front was designed by a Venetian rather than a Greek artist; and this led Mr. Donaldson to advert to a singular circumstance in the history of commerce in France, which had been pointed out by Mr. Digby Wyatt last year in the discussion on the Royal Tombs in Westminster Abbey, namely, the settlement of a colony of Greeks and Venetians at Limoges, in the south-west of France, in the immediate vicinity of Perigueux, and the other towns containing the buildings which had been referred to. The Venetians probably adopted this mode of colonization for the extension of their commerce in spices, works of art, &c. from the dangers of navigation beyond the straits of Gibraltar; although such dangers, perhaps, consisted rather in the fear of Moorish pirates and Norman enemies than in the supposed existence of rocks beyond the straits, which could not be safely passed; and certainly the Venetian influence was greatly extended by the establishment of the colony referred to. Although he had described the churches in question as Gallo-Byzantine, their peculiar elements were only indirectly derived from Byzantium through the medium of Venice, which was then the great citadel of art.

To apply the foregoing observations to our own country, Mr. Donaldson believed that if the Norman churches in England were carefully examined, they might be divided into two or three distinct classes. Not limiting the question to what Mr. Sharpe, of Lancaster, had so well developed, namely, the transition from the Norman to the Lancet or Early English, but extending the investigation to the pure semi-circular or Norman period, he thought sub-divisions might be traced, especially by those who have travelled in Greece; and they would particularly appear in the sculpture and ornamental details, and perhaps still more in the ground plans. Some Norman churches were, in plan, peculiarly like the smaller Gallo-Byzantine churches, whilst others appeared to have a character of their own. Iffley Church was very like some of the simple Byzantine churches; and he was inclined to believe that it presented the primitive type of several in England. In Herefordshire there were still many of that class; and if those students of Gothic architecture who were not content to take up facts ready made would carefully investigate the subject, he was induced to think that a rich fund of discovery might be opened to them, similar to that which had been developed by the French authors, whose remarks he had endeavoured to illustrate.

In the discussion that followed,

Mr. Scott stated that he had not particularly attended to the suggested classification of Norman churches, nor to the supposed resemblance of their plans to those of the Greek churches. Undoubtedly some of the former presented ornaments of Greek character. Kilpeck Church consisted, in plan, of a nave and choir, with an apeidal termination. The same arrangement, without the apsis, might be seen in the churches of Iffley and Stewkley. Perhaps the different styles referred to by Mr. Donaldson were not of different dates, but caused by the immigration of a different class of builders.

Mr. Godwin observed that there was a striking peculiarity, in the church of St. Front in the occurrence of pointed arches in the principal arcades. The church was at least as old as the beginning of the eleventh century, which was a very early period for the introduction of that feature, agreeing with the cathedral of Ani in that respect. Some years ago, he had himself examined the majority of the churches founded on this type in the neighbourhood which Mr. Donaldson had referred to; and certainly there could be no doubt that their principal forms and peculiarities were derived from Byzantium. At Angoulême (among other examples which might be quoted) there was an interesting building of this description; and the church of St. Hilaire, at Poictiers, was also a remarkable example of the same class. In England, the history of Byzantine architecture had yet to be written. French authors had taken much more interest in it, as Mr. Donaldson had shown; and the work by M. Albert Le Noir on the subject was worth examination. Quite recently Mr. J. H. Parker, of Oxford, had communicated some papers on the subject to the Society of Antiquaries. The first of these had been printed in the *Archæologia*, and the series was still in progress. It was clear that in England, as in France, Byzantine art had exercised a great influence. Our early Saxon churches, Hexham, for instance, judging from the descriptions which had come down to us, had been founded on the same type. The wall paintings, and other decorations of the period, which were most abundant, all seemed to be derived from Byzantium. He hoped the present paper, and the remarks which might be made upon it, would have the effect of directing more attention to the subject. That the church of St. Front was really built by a colony of Venetians was now taken to be a fact, and it was equally certain that it was built after the model of St. Mark's, at Venice, and in its turn became the type of many churches on this side of the Alps.

Dr. Hensalmann said that there was a series of churches on the Rhine erected in the twelfth century, the plans of which were formed upon the Greek cross, and surmounted by a cupola; although the latter, about the same period, became converted into a square tower. The churches of St. Martin, and of the Apostles, at Cologne, were instances of this; and a similar plan was to be seen in the cathedral of Tournay, although, in later times, a Gothic choir of greater length had been added to the latter building. He believed that the plan of the cross was introduced by the Greeks, and that the Roman churches having no transepts were derived from the ancient basilicas. In the churches of San Paola, Santa Maria Maggiore, and San Pietro ad Vincula, at Rome, there was a long nave with columns, and no transept at all. In the churches of Frose and Gernrode, in the Harz district of Germany, built about 958, the commencement of the transept might be found, and in later times this was carried out in the form of the cross.

Mr. Scott thought it was hardly correct to say that the basilicas at Rome were without transepts. In many of them the transept was strikingly apparent, though it did not project beyond the walls; just as much so as in the church of Sta. Sophia. Afterwards the speaker drew attention to a very old question,

* List of Gallo-Byzantine churches in France:—St. Front de Périgueux, St. Etienne de Périgueux, Cahors, Souillac, St. Astier, St. Jean de Cole, Brantôme, Peusasse, Trémolac, Baschaud, Ligueux, Paunat, Agonac, St. Avit-Sénieur, Bourdeille, St. Martial de Viveyrols, Mareuil, Le Vieux-Mareuil, Thiviers, Vertellac, Brassac le Grand, Solignac, St. Emilion, Le Puy en Velay, St. Pierre d'Angoulême, St. Liguaire de Cognac, Bourg-Charente, Cherves de Cognac, Genssac, Mesnac, Chastres, Pérouil, Le Roulet, Fléac, Beaulieu, Le Peyrat, Saintes, St. Romain de Benet-Saintes, St. Hilaire de Poitiers, Loches, Fontevrault, Angers.

namely, whether domes were really inconsistent with Gothic architecture. Some of the illustrations in the books referred to by Mr. Donaldson showed that the dome might be introduced with the greatest success on four pointed arches; and it might be worth consideration whether a degree of novelty might not be introduced in modern Gothic designs, by the adoption of that striking feature.

In reply to Mr. Wadmore, who inquired if any of the ornaments of the Greek churches were like those on Saxon churches in England, Mr. Donaldson replied that he hardly knew of any Saxon churches, or of any buildings before the Norman Conquest, with ornaments at all; but in the Norman architecture in England the Greek ornaments of the Lower Empire were very common, not only in churches, but in tombs, &c. The crypt of York Cathedral afforded a proof of this, having the honeysuckle and other Greek ornaments; and this might, perhaps, be considered anterior to the Norman era.

Mr. Billings said that the honeysuckle and other Greek ornaments might be seen in the Temple Church; and, indeed, they were more prevalent in the Early English period than in either Saxon or Norman buildings. Probably the earlier plans of English churches might be derived from the Greeks, consisting of a nave without the cross; but the later Norman churches returned to the columnar plan of the Romans. The churches of Leuchars and Dalmeny, in Scotland, had very beautiful apses. The Saxon church at Hexham, to which Mr. Godwin had alluded, did not exist. [Mr. Godwin said of course he had only referred to the accounts of it by ancient writers.] That church, however, still presented some very fine specimens of the Norman and Lancet period. Probably the best authorities for Saxon ornaments were to be found among the MSS. in the British Museum, and there would be found a profusion of the bastard Greek ornament, — some of it remarkably beautiful. Mr. Billings then referred to another subject, on which he felt much aggrieved, namely, the paper lately read by Dr. Henszlmann, in which it was stated that he (the speaker) and other investigators had failed to discover the principles of Gothic architecture. He would not permit it to be asserted that he had failed.

Mr. Papworth made some remarks on the prevalence of the cupola in the works of the Arabs; which, in fact, appeared to consist almost entirely of cupola and minaret. He also adverted to the classification of Norman decoration into two styles; one presenting great resemblance to the finer species of Greek art, and the other an extremely florid character of decoration.

Mr. A. Bailey referred to two small apsides, or small niches, on each side of the large apse in the church of St. Mark. These niches existed in all the Greek churches he had seen, and also in the Coptic monuments of Egypt; in those of semi-Greek origin in Sicily, in the churches in Venice, and even in Friuli and Dalmatia; but it was somewhat strange that they were not to be found in St. Front, at Perigueux. One of these niches was used in the Greek churches as a sacristy, and the other to contain the credence table. He had lately examined the churches on the south-eastern coast of Italy, referred to by Mr. Donaldson, and was much struck with their resemblance to the Norman churches in England, the mouldings (zigzag, billet, &c.) being perfectly identical.

ROYAL ACADEMY LECTURES ON ARCHITECTURE.

PROFESSOR COCKERELL commenced his third lecture by urging upon the students the importance of self-reliance. In the study of the masterpieces of art and the works of ancient authors, as well as in the instruction afforded at the Royal Academy, they had the means of acquiring all that was essential to a perfect knowledge of the elements and principles of their profession. Natural qualifications and innate good taste were, however, essential to its successful practice; and the preparation of the probationary drawings required by the council of the Academy, was the first test of the possession of those qualifications to which the student was subjected. It was true that an accidental or incidental aptitude was also necessary, as, for instance, in the general education of the student, his social position, and his possession of the means of foreign travel; and this circumstance had led to serious objections at the time of the formation of the Academy, when some had strongly urged that the facilities it would afford might tempt, into a higher sphere of art than they were fitted for, young men whose abilities would have been much better applied to mechanical and other pursuits. These objectors had contended, that it was better to leave talent to find its own level without the fostering aid of an Academy; but such opinions were now seldom avowed. On the completion of his probation-drawings the student's lot was cast; he was henceforth, if not wedded, at least betrothed to his profession; and it might encourage him to reflect upon the numerous branches of it which were open to his pursuit. He might become, with honour and advantage, the decorative architect, the engineer, the constructor, the calculating or measuring architect, the builder, the architect of dignified and interesting works of an important monumental character, the iron architect, the surveyor and valuer; or his skill might be applied in other varied departments of the profession. An aspirant for fame as a historical painter was candidly advised by Sir Walter Scott to turn his attention rather to internal decoration, furniture, and ornament. This advice, based as it was upon a correct judgment of the artist's powers, was frankly adopted; and the individual became prosperous and successful, —when, as a painter, he might have starved. In the course of study at the Royal Academy, the second step was the competition for the silver medal,—when the pupil had acquired some proficiency in his art, and learnt to verify his earlier observations by patient and careful investigation. Alluding to the duties of the student at this period, Professor Cockerell dwelt upon the importance of making careful and finished drawings of successful buildings, ancient and modern. Leonardo da Vinci's maxim was, "Take care to finish whatever you begin;" and certainly a mere sketch of the salient points of a building was as likely to present a caricature as its true effect: its real beauties could only be fixed upon the memory by attentive study, and by means of finished drawings. This plan would produce, in fact, a real economy of time. Many a travelled student might possess a thousand sketches, but few of them were careful or accurate: he might have gone from bad to worse in mannerism of style, and, whilst apparently industrious, was in reality an idler. A skilful foreigner, employed by Lord Elgin, was so well aware of this, as a defect prevailing in the works of English draftsmen, that when appealed to on the merits of the works of such an artist, he would reply, "Oh, yes, he draws in the English fashion; very quick, and very ill." It was therefore the professor's especial duty to enforce the importance and advantage of finish and accuracy of drawing. In the competition for the gold medal, the student was deemed perfect in the practice of drawing, and in the habit of careful observation; and he was therefore called upon to show his capacity for professional practice in the invention of new combinations; and at the same time to prove his ability to profit by continental travel. Then, the soundness of his judgment and understanding was put to the test, and his former studies were invested and turned to advantage; and, whether successful or not, the competitor deserved respect and honour;—as in the Olympian games, the unsuccessful were rewarded, though in a less degree than the victor. Lastly, the student had the opportunity of foreign travel; and this was unquestionably an immense advantage. By some it was supposed to be a necessity; although by others its necessity was doubted; and reasonably so, because great and important works had been accomplished without it. Wren, who had never travelled beyond Paris, was a remarkable instance of this; but, on the other hand, it could not be denied that travel enabled the student to shake off national prejudices,—to take more enlarged views of art,—to emancipate himself from the trammels of daily business, and devote himself to the highest aims. With all the advantages thus afforded, the students of the Academy must still rely mainly upon their own exertions. Let them be true to themselves, and they might be assured that from within, rather than from without, would proceed their best successes.

Recapitulating the substance of the former lectures, Professor Cockerell again dwelt upon the grandeur arising from large monolithic works. Of this, Stonehenge was a remarkable example; and there was no reason why that monument should not be regarded as coeval in date with the ruined temples of Egypt. The ruins of Selinentum presented another similar example, the Doric capitals there being formed of single stones, each of them 14 feet square. The solidity and simplicity thus achieved forcibly impressed upon the mind the "lamp" of power and energy,—the lamp of sacrifice of labour and of cost.

The square, the round, and the triangular forms constituted respectively the elements of the different styles of ancient architecture. The square was the basis of the general architectural forms of the Assyrians, the Egyptians, and the Greeks. In Holy Writ, this element was especially referred to as a matter of admiration. We read in Exodus that the altar and the doorposts were "four square:" in Ezekiel, the same thing was frequently referred to, as in the altar of oblation; and likewise in the book of Revelations. The city of the New Jerusalem, we are told, "lieth four square;" and "the length, the breadth, and the height of it are equal;"—but the last allusion, to "the height of it," was unexplained by any of the commentators. In the Grecian Doric, the plan, the general elevation, and the forms of the entablature, the capitals, and the metopes, all displayed the prevalence of the square form.

The round form, on the other hand, was characteristic of Roman architecture. The arch was raised from its subterranean condition and expanded into the dome. The circular temple of Baalbec; the mausoleum of Augustus, now the castle of St. Angelo; the Pantheon; and many other well known monuments, were illustrations of this principle. The prejudice arising from habit and education often led to a mistaken partiality for tall and angular, or for square and quadrate forms. But surely the square tower of a mediæval church, unless viewed with the eye of prejudice, could not be preferred to such magnificent structures as St. Peter's and St. Paul's, heightened in their effect by the varied play of light and shade produced by the adoption of the circular form. If we recurred to first principles and ideas, it would be impossible to reject those types of classic origin, which the ancients admired and employed, for the meagre and acute forms of the trinitarian or mediæval architects; for, in the mediæval styles, the triangle, as the sacred emblem of the Trinity, was the basis of all architectural form. In the Lombard style, a quadrate character was, however, sometimes presented with admirable effect; as in the front of the Certosa of Pavia, where it was united with Catherine-wheel windows; and in more modern architecture, the west front of St. Paul's was a magnificent and imposing example of quadrate composition. In Grecian architecture an excellent effect was produced by the well-considered opposition of square and round forms in mouldings, &c. producing great variety of light and shade.

Probably, the adoption of different types in different countries might be traced to the natural features of each locality. In examining the sketches of a most accomplished lady, who had travelled from St. Petersburgh to Athens, he had been much struck with this idea. The pine-forests of Germany might have suggested the acute and lofty spires of that country; whilst the more elegant and graceful forms of Greek and Roman architecture, were probably due to the loveliness and beauty of the scenery of those lands. As tending to prove the artistic inferiority of angular forms, Professor Cockerell observed that our own ancestors, as they became more experienced and refined, abandoned them, adopting polygonal and multangular forms in their place. The church towers of the fifteenth century were multangular, and the plan and details of Henry the Seventh's Chapel afforded numerous instances of this improvement in the national taste.

The practical application of these remarks was to be found in the fact that it was the duty of the student to inquire wherein resided true beauty and grandeur; and that study should be undertaken irrespective of national or religious prejudices, and of private or scholastic education. As a professor in that Academy, it was his duty to call attention to the elements of taste in architecture; but the future glories of the country in such matters depended upon the students alone.

In conclusion, the professor referred to a model of the famous mausoleum, or tomb of

Mausolus, at Halicarnassus, as a fine specimen of quadrate composition and monolithic execution,—observing that at this moment, when the attention of the public and the profession was turned to the erection of an appropriate memorial of a departed statesman and warrior, that work was worthy of particular study. In the designs for a new National Gallery, the talents of the profession at large would no doubt be called into general competition; and on that account also no source of novelty or originality should be overlooked.

A SYSTEM OF TOWN DRAINAGE.*

THE second object which a system of town drainage is intended to effect is the affording an outlet to the land springs, or, in other words, to that part of the rain-fall which penetrates the soil, and which, if not removed by artificial means, will, in most situations, render the soil permanently damp, and the habitations which are built upon it unwholesome.

The quantity of this moisture, I need hardly state, will be distributed, both with respect to situation and to time, in a very different manner from the quantity to be removed from the surface. The latter will, in an urban district, generally be nearly proportional to the extent of the drainage area, while the former will be mainly influenced by other causes. Among these may be mentioned the permeability of the strata in a horizontal direction, and also the position of the spot with respect to impermeable beds, which have the effect of concentrating the natural flow to one spot, while an adjacent district may be left nearly dry.

The flow of underground water will also depend much upon the geological character of the surrounding district, with respect both to the inclination of the strata, and the nature of the lower beds, which may, according to circumstances, either increase or diminish the extent of effective drainage area, or afford to the water in the soil a natural outlet more or less efficient.

While the quantity of water accruing from the soil is thus unequally distributed with respect to situation, it will be found much less fluctuating in point of time. The sudden variation of the weather will not be immediately felt, and the discharge, although very different at different seasons, will be nearly constant for considerable intervals.

The discharging power of the conduits, depending upon their dimensions and inclination, must therefore be proportioned to the maximum quantity of the water yielded by the district, the drainage of which passes through them: since, however, this may be arranged, the flow from one portion of the district can never have passed away before that arising from a more distant place has reached the same point.

The level at which these drains are laid must evidently be, at least, as low as the basement stories of the houses, since their object is to remove the damp which would be caused in the houses by the moisture of the soil; but an important point must be borne in mind,—namely, the danger of increasing this dampness by the very means employed to remove it. Houses built upon open gravelly soils, with every facility for natural drainage, may be damp; while those constructed on retentive clays, on the contrary, may be dry. In the former there is a draught of moist air through the porous soil upwards into the house, while the impermeable character of a clayey soil prevents such occurrence. It is, therefore, of the last importance that means should be taken to prevent an upward draught from the drains into the buildings.

The material of which drains built for this purpose should be constructed, should be of such a kind, or the method of construction such, as to afford an access to the water from the surrounding soil; and the inclination should be considerable, in order to carry the water easily away, and thus to avoid the danger of an outward pressure, which would increase the evil we seek to remedy. For the same reason, they should be of dimensions somewhat greater than is necessary to carry off the water.

I have only farther to remark, as connected with this part of the subject, that the lines most suitable for such drains, will, in every case, be determined more by local circumstances than by abstract principles; and I need not therefore enlarge further upon this portion of the subject, my object being simply to show that the removal of the moisture contained in the soil involves considerations distinct from those which belong to either of the other two sorts of drainage.

This part of the question, although far from unimportant, possesses, in itself, few features different from the ordinary problem of drainage for agricultural purposes; and, as I wish simply to look upon it in its relation to the other objects to be attained by a system of sewerage, I do not propose here to enter upon that question.

We have now arrived at the third point which is to be kept in view in instituting a system of drainage, namely, the removal of the refuse liquids produced in a town. This presents a totally different question from the two divisions of the subject above discussed, and to it may be applied the name of "sewerage," as contradistinguished from "drainage" in the limited sense, which last is more strictly applicable to the removal of the natural waters.

It is impossible to overestimate the importance to a community of having the soil and the buildings kept in a state free from moisture, not only as regards the health and comfort of the inhabitants, but also in reference to the preservation of property of almost every description; but the removal of the offensive refuse arising from dwelling-houses, stables, &c. and the thousand deleterious compounds discharged from manufactories, forms a still more important desideratum. The consequences of a good system of sewerage are not confined to mere bodily comforts or advantages, but produce an important effect in elevating the whole tone of society; while an inefficient one not only furnishes a fertile source of disease and discomfort of a physical character to all classes of the community, but renders the moral degradation of an otherwise degraded population more hopeless and complete.

This, then, is the main object of draining a town—not that the soil be rendered free from damp,—not that the town should be put beyond the reach of being damaged by an occasional flood,—but that one great cause of that squalor and misery, to which every one is frequently an unwilling witness, should be removed, and the air in the poorer and more densely-populated districts rendered pure and wholesome.

The quantity of sewage water is clearly not to be calculated in the same manner as that arising from either of the other two sources, but it will be nearly proportional to the number of inhabitants in the district to be drained, varying, of course, considerably in different towns, and in different parts of the same town, according to the nature of the buildings and the character of the population. In general, it may be assumed to be nearly equal to, or rather greater than, the quantity of water supplied, such portion of the water-supply as does not find its way into the sewers being more than compensated for by matters arising from other sources. There is, however, this important consideration, which does not apply to the same extent to either of the other two kinds of drainage;—that regard must be had to the probable increase of the town in particular directions, and the drains laid out, so as to be sufficient to carry off the sewage from a district considerably greater than that which they have in the first instance to accommodate. This object may be attained, either by increasing the original dimensions of the sewers, or by laying out the lines of main drainage in such a manner that new drains may be provided for newly-built portions of the town, without involving the ultimate construction of a greatly increased aggregate length of sewers.

While local considerations must, in almost every case, have great influence in determining in what manner this can best be accomplished, yet there are so many advantages offered by sewers of a sufficient size, that in general it will be better to make allowance for the expected increase of the town when determining the dimensions of the original sewers. If those formed for the drainage of limited portions of a town are not made of dimensions reduced in proportion to the work that is required of them, they may not require provision for extension; and if an increased flow is brought down the subsidiary sewers, the main outlet into which they lead must originally be constructed of such a size as to dispose of this extra quantity.

Another consideration which affects the size of sewers, and which does not enter into the question of drains for natural waters, is this, that not only will a greater capacity of sewers be required as a town increases in extent, but, even independently of such increase, it will be found that the general tendency in an improving place will be to increase the quantity of sewage water; for, as the condition of the inhabitants improves, they become accustomed to make use of water in larger quantities; and a necessary consequence of this large consumption of water is, to render it essential to discharge all their refuse into the sewers.

The dimensions of a sewer, at any point, supposing it to be constructed sufficient, and no more than sufficient, to perform the work required of it, will be nearly proportional (having due regard to the inclination) to the total quantity of sewage yielded by the district drains towards that point. The sewage water is, no doubt, delivered into the sewers at intervals, and not in a constant stream; but the time during which the delivery takes place is so long, that it would not be wise to apply the principles laid down for surface-water drains to any great extent. Suppose, for example, that the time during which the bulk of the water passes into the sewers is six hours, then the discharging power of the main conduit might be rather less than the strict proportion would give, because the flow of the same quantity through the main sewer might be spread over a longer period, say nine hours, without affecting the velocity of flow in the collateral sewers, provided that some of those tributaries discharged into the main outlet drain three hours later than others. But even in this case there would be a period of three hours, during which the maximum quantity would be flowing down the main conduit, and any great contraction in its size would be accompanied by a damming back of the water in the tributary sewers.

This brings me to remark, that a very important requirement in a system of sewerage is, that the velocity of the water should be sustained throughout the whole of its course. Any check given to this velocity is highly objectionable, inasmuch as it tends to produce deposit and obstructions in the sewers. Besides this, if the velocity is checked, the sewer must be made of sufficient capacity to serve as a reservoir; and their being filled with foul water increases an outward pressure which tends to produce leakage and consequent impregnation of the surrounding soil with noxious matter.

In many instances, as low-lying districts, the outlet is not always open, owing to the main sewer being below the level of high water; but it admits of great question whether, even in this case, it would not be preferable to collect the sewage water in a large tank, from which it might be discharged rapidly during ebb-tide, leaving the velocity in the sewers unaffected.

The inclination of sewers should be arranged in such a manner that the velocity will be nearly constant throughout, but rather greater in the higher and more subsidiary drains, inasmuch as in the smaller stream the scouring power is less. This velocity being not only dependent on the inclination, but also being a function of the hydraulic mean depth, the inclination must be greater in the small sewers, in which the hydraulic mean depth is less.

We observe a similar law hold good in the operations of nature, for not only does the natural configuration of almost every country produce the same result in the inclination of its water-courses; but, where an exception to the rule occurs, the constant tendency of the water is, to bring the section of the river to a uniform curve, by eroding those parts of its bed immediately above a sudden fall, and filling up those parts where the channel is lower than the curve which it tends to assume.

It is important, in order to give the above arrangements effect, that as little resistance as possible should be experienced by the water in

* See p. 3, ante.

passing down the sewers. With this object the inside of the sewers should be free from irregularities, and their course as straight as possible; sudden bends and junctions with other sewers at right angles being avoided, as tending to cause eddies, and thus to favour the accumulation of deposits.

Another matter which it is important to mention is that of form. This point has been much discussed, but I believe that the problem is not one of such a complicated character as it has sometimes been considered. Any ordinary form for small sewers will, if well executed, be found to possess sufficient strength, and we are consequently left to select that which offers least resistance to the flow of the water. This form is that of a semicircle of such a diameter that the water would just occupy the whole of its area; and as the quantity of water to pass down the sewer is variable, it will be proper to adapt the form of the sewer, so that the minimum quantity will be in the most favourable conditions. Thus the sewer should be formed with a semicircular invert of such diameter as to be filled by the minimum quantity of water calculated upon; but the form above the invert is a matter nearly of indifference, as far as the flow of the water is concerned, since whatever be the form, if the sewer be of considerable capacity, the velocity will never be less than when the minimum quantity is flowing along it. The most convenient form for construction is that in which the walls batter in a curve and a semicircular arch is thrown over the top.

CLOACA.

THE NATIONAL ARMOURY.

THE letter of your correspondent "A." has made a tremendous stir in the right quarters, and will, it is to be hoped, lead to improvement. Mr. Hewitt has been trying to get materials for a denial of the truth of the article, but found nothing could be done. The "winged burgonet" is proved a cheat, and had better fly at once. Pray look in upon us again: we are in a miserable state,—deception and error from head to tail. Look at the "Spanish armoury," for example. I am ashamed to take the people round it. Have you heard what one of our people has done at Windsor? *Disjointed* one of the most perfect suits in the world, and stuck up the pieces in various parts! No wonder the Frenchman called us "varnished barbarians."

THE BEEF-EATER.

AN ARCHITECT BY INSPIRATION.

SIR,—In your last number you notice that "the church of Baslow has been restored in the Early English style of architecture from designs by *Sir Joseph Paxton*." I am an architect of four and twenty years' standing; I can therefore form some judgment of what is required to qualify a man for the practice of that profession, and should like to learn by what "royal road" Sir Joseph has passed from the position and education of a chief gardener to the style and acquirements of an architect. We know that many a builder, guiltless of any attempts with the pencil, but well versed in his own art, and apt in discovering taste and skill in others, can hire a young architect, and between them produce some very passable buildings. The Queen's palace at Osborne, and many other places of varying pretensions, give token of what may be done in this way. Then again, the Crystal Palace—an enlarged idea of a grand conservatory, may in its principal features have occurred to the mind of Paxton; he may have been sufficiently skilled to produce some sort of drawing of it; he may afterwards have evoked the aid of the builder's factotum, and worked up his idea into very tolerable expression, and then the contractors may have accomplished the rest,—the skill displayed in the details of its construction—indeed, all the art required beyond what any intelligent employer would introduce in describing his wants, being the result of their labours and that of their able assistants drafted from the offices of architects and engineers. How all this was done, and how it is now being enlarged upon, with the like aids, in the reproduction of the Crystal Palace at Sydenham, we can well understand.

But how does it happen that this gentleman is carrying his inroads into church architecture? Is he really an architect "born in a day?"—a prodigy of this remarkable age, when the tardy gait of bygone times is startled by miraculous development—when it would seem even mind may be accelerated into marvellous maturity—when the harvest of art may be reaped without its spring-time, and the rose of thought be plucked full blown without its buddings.

If Barry could only become Barry by years of laborious study, grafted on the natural endowments of his birth; if Bailey or Kiss could only grasp at eminence through a lifelong striving with the chisel or the clay; if Turner began and ended his days with the brush ever in his hands, and nature's sweetest scenes ever in his thoughts,—if these things be sober verities, then who will dare to deny that Sir Joseph must be a very sham,—meritorious he may be—clever he undoubtedly is—but nevertheless a sham of the day, pretending to knowledge which he cannot possess,—undertaking to do what by the light of his own mind, and the use of his own hands, he could never perform,—pirating upon a profession to which he can lay no honest claim,—pocketing profits which rightfully belong to others, and reaping the honours of an art which he never learnt, and which he knows that he can only exercise by means of an ingenious concealment of his own deficiencies, while freely trading on the stores of his helpers.

The tendency of an abuse so flagrant and so notorious is to depress architecture as an art, and discourage its disciples. If Sir Joseph be elevated at a stroke by such a system into the full-blown dignity of a professor, then may the duke's butler, or any other official equally clever, enjoying the like patronage, and tricked out with the like pretensions, trade with the same materials. Journeymen architects are to be hired as readily as journeymen bricklayers, and if such an employer be only sharp enough to get orders, and knowing enough to conceal his own ignorance, they will do the work and enable him to rustle into fictitious importance, and emulate the honours so unsparingly lavished on Sir Joseph.

Is the profession really come to this? Can it be right that such quackery should be held up in high places, enriched with commissions, and honoured with knighthood?

Southsea. OBSERVER.

THE PROPOSED NEW LITERARY AND SCIENTIFIC INSTITUTION AT BIRMINGHAM.

THE meeting held in the theatre of the Philosophical Institution at Birmingham lately, at the invitation of a number of gentlemen engaged in devising a scheme for establishing in that thriving town a new literary and scientific society or people's college, was as influential an assemblage of the inhabitants of the town as has been held for some time. Various letters of apology for non-attendance from influential persons were also read, and among them one from Mr. Charles Dickens, containing an offer, if alive and well, to come down next Christmas and read his "Christmas Carol," at the Town Hall, on one or two nights, for the benefit of the proposed institution, with the proviso that as large a number as possible of the working classes should be admitted free. "There would," said Mr. Dickens, "be some novelty in the thing, as I have never done it in public, though I have in private, and (if I may say so) with a great effect on the hearers."

We have already given a general idea of the comprehensive purposes of the originators of the new institution. We only regret that the idea of including a public library, as well as museum, seems to be rejected on the ground that it would require a more extensive building. It is to be hoped, however, that the new institution will meet with a better practical reception, as to ways and means, than was met with by the proposal a short time since to agree to the self-infliction of a halfpenny rate for a library and museum for behoof of the nerve and muscle of Birmingham, the working classes, through whom so many fortunes are accumulated in that money-making town. Lord Lyttleton and other gentlemen addressed the meeting, and various appropriate resolutions were passed.

The estimated cost of carrying out the entire scheme proposed is 19,000*l.* to be raised by donations, "supplemented, if need be," as the *Birmingham Journal* remarks, "by a rate under the Libraries and Museums Acts," which, by the way, however, cannot be even asked or applied for till the expiry of two years from the period of the last unsuccessful application to "three-fourths of the rate-payers." The *Journal*, humbled, by past experience, in its ideas of what is to be expected from Birmingham purses or pockets, seems to think that "the sum is a large one for Birmingham to raise," but remarks that "as the scheme comprehends the provision of a depository for mining records, and lectures on subjects of vital importance to the district, the co-operation of the ironmasters is confidently, and with good reason, relied upon."

THE IRON TRADE.

THE result of the quarterly meetings of ironmasters was as favourable to the rise of prices as any speculator could desire. It signifies not that "many of the founders complain that they have not had fewer orders on hand for four years;" that, in fact, "the advances already made have had a very great effect on the hollow ware and general foundry trade, as they have not yet been able to get a corresponding advance on their multifarious produce;" or that, besides the English and Welsh stock of material on hand, in Scotland alone there has been accumulating in the market, and now gluts it, a stock of no less than "550,000 tons at least—equal to nearly one year's entire consumption:" prices, notwithstanding, must be forced upwards,—there has been no disclaimer of the preliminary notice of advance made before the meetings—the "feverish anxiety" of those who rule the roast has not been allayed. Instead of "commercial activity" pressing on prices and forcing them up, as is alleged, prosperous as the country is, it lags far behind the "unusual feeling of excitement" and the feverish anxiety amongst iron masters,—an anxiety and excitement, the existence of which even their most strenuous seconders admit, and by reason of which even they allow that "perhaps prices may have been rather prematurely forced up."

The prospects of the opening year are thus viewed in the *Birmingham Journal*, under the head of "The Iron Trade."

"The same correspondent, an eminent manufacturer, who favoured us with the communication on the condition of the iron trade in Scotland, which appeared in the *Journal* of the 27th ult. says:—'I send inclosed the earliest review of the first brokers in Glasgow, from which you will, I hope, extract such part as will enlighten your readers so far as to prevent their aiding the present speculation in iron.'"

We can only give the concluding remarks of the brokers alluded to, namely, Messrs. W. Connal and Co.:—

"It is impossible to give an opinion as to the course of the market, but we trust speculation will not be carried further during 1853, as *it is evident, unless there is some cause for the great advance, which we do not perceive, that the result must, sooner or later, be similar to that produced by the speculations of* 1845, *which ended in disappointment and loss to almost every one connected with the trade; and this result appears more certain now than it did then, the furnaces erected being one-third more than at that period.*—WILLIAM CONNAL and Co. Brokers."

All we desire is to see trade in every branch—in iron no less than in stone and brick and timber—flourishing *unchecked*, and *steadily* advancing. We have no interests adverse to the best interests of the iron trade itself, and no personal motive, and as little desire or pleasure, in running it down. It was the clear and painful recollection—and that only—of the undue and excessive proneness of the "great masters," as they are called, in this trade, and of their coadjutors, to force up prices unnaturally, previous to and even since their last great smash, that has all along induced us steadily to aim at a counteractive line of remark, as we fully anticipated the present perilous policy and unwholesome excitement in the trade, which, if still

persisted in, must do a great deal of mischief, and will ultimately ruin not a few of these "masters" themselves.

Plates and sheets are now reported to have reached 14*l.* per ton and rails 12*l.* delivered in Liverpool. Scottish pig-iron fell after the recent meetings, but is said to be also on the rise again. Wages both in the iron and coal trades are going farther up, and the price of coal has been increased in the Northumberland and Durham districts, at a sort of "great master" meeting of the coal-owners, with the Marquis of Londonderry at the head of them. Best coal has been advanced, on a motion by the marquis unanimously carried, from 22s. 6d. to 24s. and other house coals in proportion. That *this* rise has been forced on the coal-owners by any increased and urgent demand in the "house" department of our social economy, is as little to be credited as that the rise in iron, which has really caused it, is a legitimate consequence of the pressure of sound demand in that department of our trade.

LONDON GRAVEYARDS.

It is scarcely credible, after the evidence adduced on the condition of these plague-spots—filled to overflowing in the majority of cases—that individuals can still be found, who with a singular intrepidity of assertion, can pronounce them positively agreeable. As to the public custodians, in whom control of them is to some extent confided, I will cite what appears to me almost a parallel case. In visiting the habitations of the poorer classes, where the "undrained cesspool" showed its effect in the discoloration of paint on the closet-door, and the effects of the presence of "carburetted hydrogen" are visible in the leaden hue given to every thing about,—on asking, from the condition of atmosphere, how they could manage to live in such a place, I was a little astonished at the reply—"We don't observe nothing, sir." Their senses, from long habit, or other and physical causes, had become blunted: their olfactory nerves either had become obtuse, or that sense was altogether wanting.

Their depressed physical condition was, however, an altogether different, and far more eloquent response to the question. Either the churchwarden's attention has not been sufficiently directed to the subject, or, like these poor people, when so directed, he is quite unable to appreciate the evil. Need we wonder, when we remember the vacillating course pursued by the Imperial Parliament on this question, and the general ignorance of the ordinary laws of chemistry and of physics? S.

OUR CARVERS.

Mr. Scott, in allusion to my remarks on the "Cannon-street Collection," and its probable influences on carving and carvers, seems to consider my letter as somewhat of a "tilt" at the notion of forming such a museum; and that I hint at the possibility of its "cheapening carved work and rendering it abundant." Will you therefore afford me space for assuring him that I had not the least intention of conveying such an idea? On the contrary, I think no person capable of forming an opinion on the matter—unless eccentricity is more to them than the advancement of art—could utter a word in hostility to the establishment, *so far as it goes*, or hold back for a moment their support to it. But at the same time I unhesitatingly suggest, that unless the donors and subscribers to the museum back up their theories by a systematic provision of proper remuneration for the art they would create and the feeling they would resuscitate, the reformation will never become manifest, and the whole business will avail nothing. You may school an artist to perfection, but he can scarcely give you evidence of his studies if you make him work with tethered tools.

In both classical and mediæval sculpture there is not only a pervading evidence of knowledge, and power of design and artistic skill in execution, but a deep feeling of love and devotion in the work, which could not possibly have co-existed with a fever for speed and cheapness, such as distinguishes the work of the present day.

So, if we would bring back the pure spirit which stands like a halo on the works of these "Angeliers" of sculpture, by whom the Eleanor effigy and such lovely works were wrought, and which spirit is now replaced, even in our most pretentious buildings, by a coarseness which is called "effect," and our utter absence of character and feeling; or if we would see ornamental art regain its vitality, and the Architectural Museum fructify, let the position of the modern artist as to remuneration be assimilated as far as possible with the circumstances under which the works which we now cherish and hold up as examples, were produced.

If architects, in laying out their works for sculptural decoration, would apply their means where they are limited, to such portions only of their design as could be completely commanded by them, reserving the rest for future attention, and setting simply the key-note to the excellence they would ultimately see in the completed work, there would necessarily be a salutary seeking and choosing of the men most fitted for the embodiment of their ideas; and these men must be those who have ideas of their own, and who love to cultivate them. Thus the artistic and mechanical minds would soon take their respective places. A spirit of emulation which men could afford to indulge in would be engendered; and with the all-important aid offered by the Architectural Museum, we should soon see works vieing with those of the past in all that is worthy and valuable in art. J. R. C.

PROVINCIAL NEWS.

Grantham.—The corporation of Grantham have selected Mr. Thomas Oliver, jun. as architect for the erection of baths and washhouses for that borough.

Chelmsford.—The report of the committee in favour of the purchase and alteration of the present Mechanics' Institute has been adopted, after a long discussion, by a majority of 57 to 9; and the report has been referred back to the committee for the purpose of raising the funds and carrying out the resolution.

Huntingdon.—A new infirmary is to be erected here, the foundation of which will probably be laid in a few weeks.

Banbury.—The church of St. Paul, on the Warwick-road, is rapidly approaching to completion, and will probably be finished by 19th proximo, when it is expected that Christ Church, at the other extremity of the town, will be consecrated.——Progress will now be made in the laying out of the new cemetery, the requisite preliminaries being completed.

Holdenhurst.—School buildings, according to the *Dorset Chronicle*, are to be erected at Moordown, in this parish.

Holyhead.—At the harbour works, on Tuesday in last week, a heading, containing 35 cwt. of powder, exploded. The shock was felt through the whole town, and the windows of the Victoria House, in Stanley-street, were shattered to atoms.

Wolverhampton.—It appears from a communication in the local *Chronicle*, that the objections to the new Exchange have at last been removed by the amendment of the ventilation, the removal of acoustic reverbration, &c. The lighting has been improved by the additional insertion of about 1,000 feet of glass.

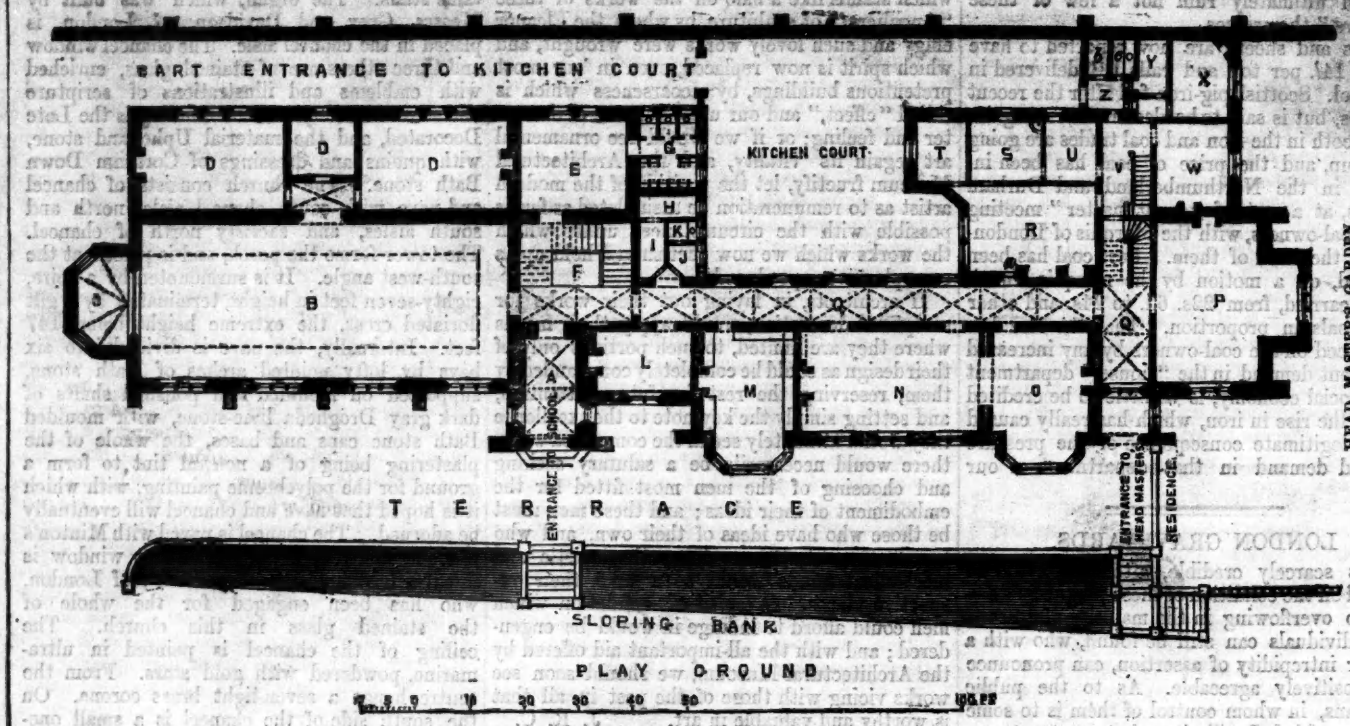
Bridgnorth.—This town, it seems, is at length making efforts in the way of improvement. Some have already been accomplished, such as the widening of the approach to the bridge, a dangerous spot; the expenditure of about 4,500*l.* on new water-works; a larger supply of gas; new causeways; and others. There are many yet remaining which require immediate attention, and particularly a public cemetery. Some three or four years ago it was admitted that the churchyards were not fit for another interment, but funeral ceremonies have been performed there day by day ever since. Attempts made by St. Mary's parish, were thwarted by St. Leonard's, but it is to be hoped such opposition will soon be put an end to by some general Act of Parliament.

Liverpool.—The new church of St. John the Divine, at Fairfield, near the Botanic-gardens, was consecrated on the 14th inst. It is designed to accommodate 1,050 persons. About 300 of the seats will be free. The church contains stalls. The organ, which was built by Messrs. Grey and Davidson, of London, is placed in the chancel aisle. The chancel window and three others are of stained glass, enriched with emblems and illustrations of scripture narrative. The style of the building is the Late Decorated, and the material Upholland stone, with quoins and dressings of Corsham Down Bath stone. The church consists of chancel and nave, with south chancel aisle, north and south aisles, and sacristy north of chancel. The tower forms the porch, and is placed at the south-west angle. It is surmounted by a spire, eighty-seven feet in height, terminated by a gilt floriated cross, the extreme height being 147 feet. Internally, the nave is divided into six bays by lofty pointed arches of Bath stone, supported on moulded and polished shafts of dark gray Drogheda lime-stone, with moulded Bath stone caps and bases, the whole of the plastering being of a neutral tint to form a ground for the polychrome painting, with which it is hoped that nave and chancel will eventually be adorned. The chancel is paved with Minton's red and black quarries. The east window is filled with stained glass by Gibbs, of London, who has been engaged for the whole of the stained glass in this church. The ceiling of the chancel is painted in ultramarine, powdered with gold stars. From the centre hangs a seven-light brass corona. On the south side of the chancel is a small one-light tracery window, the sill of which forms a credence table: this has been filled with stained glass, the gift of the architect. The chancel aisle window was the gift of the clerk of the works, the late Mr. H. H. Mackinney, formerly a pupil of the architect of the church, and who met with a sudden death, at the age of nineteen, by a fall from a chaise in Scotland. The wrought brass gas-fittings were by Potter, of London. The whole of the works have been executed by Mr. Hugh Yates; joiners' work by Mr. Hughes; slating and plastering by Mr. Jones; plumbing, painting, and glazing, including ornamental painting, by Mr. Edwards; smiths' work by Messrs. Weber and Co. The carving, including font, was by Mr. Rossiter. The cost of the whole, exclusive of gifts, land, law expenses, architect's commission, organ, and upholstery, has been less than 4,100*l.* The whole has been carried out from the designs of Mr. Raffles Brown, under whose direction the stained glass, furniture, and fittings have been added. The parsonage, which adjoins the church, has been erected in a corresponding style and material from designs by same architect, at a total cost of 1,400*l.*

Lower Peover.—The old church of Lower Peover, in Cheshire, originally built in twelfth century, was re-opened on 15th ult. after having undergone a thorough restoration, in accordance with designs by Mr. A. Salvin, architect. It consists of nave, north and south aisles, and chancel, and is built almost entirely of wood. The outside walls are constructed of timber and plaster, and the whole of the interior fittings and the pillars and arches supporting the roof are of oak. Prior to its restoration, the pillars and arches were thickly coated with whitewash, the removal of which has been the means of discovering much ancient carving. On each side of the chancel is a small chapel, separated therefrom by an oak screen. The chancel is also separated from the nave by an open screen. The ancient pulpit stands on the north side of the chancel. It is of an octagonal form, and contains specimens of inlaid woodwork.

Sheffield.—The new east window of St. Philip's Church has been completed and erected. The style, like that of the church, is plain perpendicular, and it consists of ten chief openings, divided by a transom, and surmounted by corresponding tracery. The artist is Warrington, of London.

Keighley.—The Earl of Burlington, the principal landowner about the township of Keighley, has recently thrown open his estate for sale, and some of the principal sites have been laid out for private residences and public streets: some residences are already completed, and others are in course of erection; while new streets are



PLAN OF SWANSEA GRAMMAR SCHOOL.

springing up. It is said that 600 houses have been erected in a short time. On Wednesday in last week, new sales of building-ground were effected, and among them were a lot of three acres near the Midland Station, for the purpose of erecting suitable abodes, &c. to be employed and fitted up with wool-combing machines, for producing what are termed tops by the manufacturers, to supersede hand-labour, as heretofore. Ground for the erection of a new district church and parsonage in Eastwood has been granted by the Earl of Burlington.

Holmfirth.—An adjourned meeting of those influential inhabitants who have undertaken to ensure the erection of a monumental record of the flood of February 5, 1852, took place at the Crown Hotel, on Monday in last week. No special site was fixed upon for the erection, this being dependent on the amount of money subscribed.

Cudworth.—St. John's School Church Room, in the Gothic style, situate at High Cudworth, has been opened for divine service. The cost of the building has been about 500*l.* The design is by Messrs. Lockwood and Mawson, architects, Bradford. The builders were Messrs. Wilson and Son, Hull; Mr. Holdsworth, of Cudworth, joiner; Mr. J. Dixon, of Shafton, plumbing and glazing.

Sunderland.—The contract for constructing a cofferdam on the south rocks, for the purpose of facilitating the excavation of the tidal channel of the sea entrance to the dock, has been let to Messrs. Thompson and Hunter. It is calculated that about 600 loads of timber will be required for its formation.

Glasgow.—The Commissioners of Public Works have intimated their intention of removing the galleries in the choir of the cathedral, and of effecting several other improvements on the edifice.

BRICKMAKERS' DISPUTES.—Some excitement and alarm were last week felt at Manchester and Ashton by the departure of a special train with 525 brickmakers from the former town to the latter, where it is said that workmen are making larger-sized bricks at the price of the smaller ones at Manchester. The police and military, however, were on the alert, and made a counter demonstration, which limited the little army of brickmakers to "bread and cheese" at the "temperance room." They were allowed, however, to visit some of the brickworks where the objectionable prices are accepted by the workmen, a physical force demonstration itself rather beyond the limits of the law. None of the workmen visited have as yet ceased work.

SWANSEA FREE GRAMMAR SCHOOL.

WE some time since mentioned that a new Academy was to be erected at Mount Pleasant, from designs by Mr. Thomas Taylor, architect. The building is now completed, and we give a view and plan of it. Mr. Rayner was the builder. It is in the Tudor style, and comprises a school-room, with an open timber roof, two class-rooms, hat and cloak room, dining-hall, library and master's residence, with accommodation for sixty boarders. There is an entrance-hall leading to the whole (except the master's house) by a groined corridor. A tower rises from the entrance-hall as its base, and terminates in an octagon sixty feet high. The south-west front is the principal one. The walls are of native stone with Bath-stone dressings.

The following references to the plan will explain the arrangements more clearly.

REFERENCES.

A. Entrance-hall to school.
B. School-room (the dotted lines representing a gallery for spectators at examinations).
C. Master's dais.
D. Class-rooms.
E. Hat and cloak-room.
F. Principal staircase.
G. Waterclosets and urinals.
H. Shoe-cleaning room.
I. Shoe-room.
J. Washhand-room.
K. Master's watercloset.
L. Under master's sitting-room.
M. Library and museum.
N. Dining-hall.
O. Head master's dining-room.
P. Drawing-room.
Q. Corridor and masters' staircase.
R. Kitchen. *a.* Dinner-service window.
S. Scullery.
T. Larder.
U. Coal-house.
V. Servants' staircase.
W. Servants' hall.
X. Housekeeper's-room.
Y. Knife and fork cleaning room.
Z. Servants' porch.
b. Ashes. *c.* Servants' w. c.

PROPOSED BATHS AND WASH-HOUSES FOR ISLINGTON.—A poll has been taken in the parish of St. Mary, on a proposal made in the vestry for adopting the Baths and Wash-houses Act. At the close the numbers were—for the motion, 566; against it, 452. As the Act requires a majority of two to one, in order to give effect to its provisions, the motion is lost.

SPRING HILL COLLEGE COMPETITION.

As the universal exposer of insults offered to the profession, I venture to address you on this subject. The conditions, although most carefully declining to give any promise of the slightest "quid pro quo" to us poor architects for our trouble and expense in sending in designs, are drawn up so much in what I am sorry to say appears now to be the customary manner, that I do not lay so much stress upon their *special* unfairness as your correspondent "Guillaume," and indulge in a hope (may it not be a visionary one) that any professional authority who may be called in to arbitrate, may prevent any such gross abuse as he seems to anticipate.

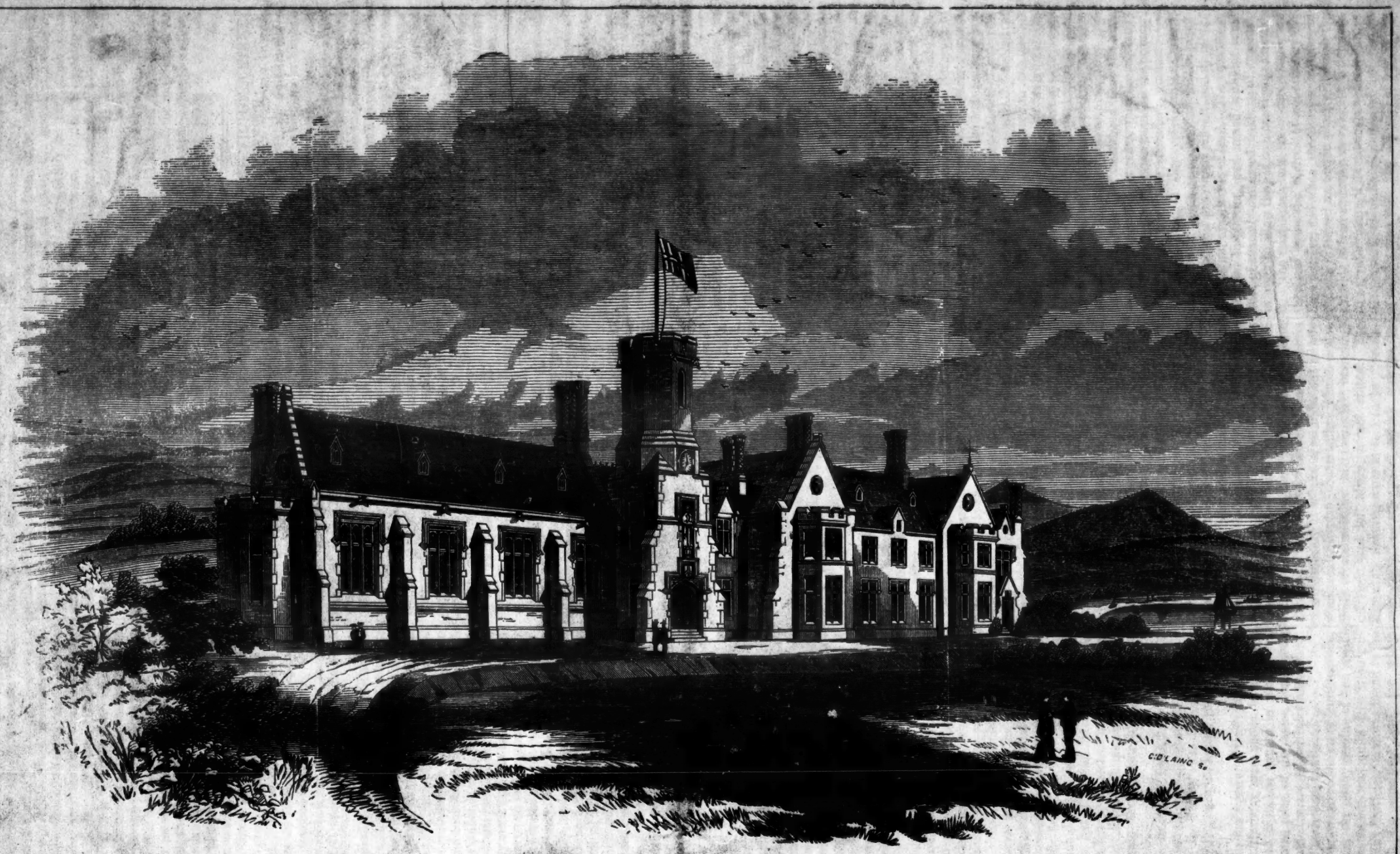
With this view I ventured to apply to the proper authority for sections of the ground shewing the levels, without which nothing can obviously be done: to this apparently reasonable request I received the exquisitely logical answer that *as* the plans of sewerage, &c. are left discretionary, *therefore* the committee cannot supply any information as to the levels; which being translated into plain English, amounts to this—"You competitors, to whom, of course, time and money are no object, are to undergo all the trouble and bear all the expense of making, sending in, and removing your designs; *ergo*, you are to bear all the responsibility and expense of taking sections of the ground: you are to make bricks, and *of course* we do not supply straw."

What makes the refusal of the committee the more monstrous is, that they must have the levels taken before they can judge of the designs sent in; but they prefer that the expense of taking them should be paid for by each competitor; that is, paid for as many times as there are competitors, rather than that they should once for all supply them. This, sir, is, I fear, a fair sample of the logic of committees, who, of course, cannot be expected to take any step, however just and equitable, which would involve the slightest expense to them.

AN INTENDING COMPETITOR.

WANDSWORTH LITERARY AND SCIENTIFIC INSTITUTION.—The first *soirée* of this institution was held at the Eagle Assembly Rooms, on Tuesday in last week: the Rev. H. Moseley presided, and Mr. Charles Pearson explained, with diagrams and models, his proposed City improvements. An extensive variety of objects were exhibited, including specimens of arts, manufactures, new inventions and discoveries, models in motion, objects of natural history, &c.

VOL. XI.—No. 521.]



SWANSEA FREE GRAMMAR SCHOOL.——MR. THOMAS TAYLOR, ARCHITECT.

THE PRESERVATION OF TIMBER.

INSTITUTION OF CIVIL ENGINEERS.

On the 18th inst. (Mr. Rendel, the president, in the chair), the evening was entirely devoted to the discussion of Mr. Burt's paper "On the Preservation of Timber."

The theory of the various processes was described: the action of the solutions in water of metallic salts, such as chloride of mercury (Kyan's), chloride of zinc (Burnett's), or sulphate of copper (Margary's), was, if the mixture was sufficiently strong, to coagulate the albumen in the sap; but the fibre was left unprotected, and it being a property of albumen to render innocuous the corrosive sublimate combined with it, the marine worm or the white ant would immediately attack wood so prepared.

Creosote had the same effect of coagulating the albumen, whilst it gave a waterproof covering to the fibres, prevented the absorption of water, and was so obnoxious to animal life, that, hitherto, it was stated, no instance had been adduced of well creosoted timber having been either touched by decay, dry-rot, or the marine worm; and the trials made in India showed that it was equally objectionable to the white ant.

The chemical products of the distillation of coal tar were described, and it was shown that the napthaline was essential as an antiseptic; that the process should be carried on with heated creosote, in order that this product should not crystallize in the capillary tubes of the wood, and that it would be advantageous to desiccate the timber, before it was submitted to the process, for which purpose it was proposed to dry the wood by smoking it in an oven, whence it should be conveyed on the same trucks into the cylinders, exhausted to the extent of 26 or 27 inches of mercury, and then saturated with heated creosote, under a pressure of 120 lbs. to 150 lbs. per square inch: wood thus saturated to the extent of 7 lbs. or 10 lbs. per cube foot, might be presumed to be indestructible, as, when even by a less perfect process such an extent of saturation had been attained, no authentic instance of decay or injury from worm had ever been adduced: numerous specimens of wood so prepared, that had been underground and in the sea, for from twelve to twenty years, were exhibited, and all were perfectly sound.

The alburnam, or sapwood, absorbed the creosote more readily than the heart of the timber, which could, however, be penetrated by the solution of chloride of zinc (Burnett's process), of which it was stated, that careful analysis demonstrated its intimate combination with the timber; it was therefore suggested, that in cases where the complete preservation of the timber was of vital importance, and expense was not a consideration, the wood should be first subjected to Burnett's process and then be creosoted, by which combined means it would become indestructible.

It was shown that dry wood only should be subjected to creosoting: by that process sapwood, otherwise almost useless, could be rendered very serviceable; and that for piles for marine work whole round timber should be used, because the outer portion, or the alburnam, was so much more readily saturated with the oil; and this prevented the worms from making an inroad into the heart.

Timber should not be kept floating in ponds, as in London, but it should be stacked in the docks, as in Liverpool and Gloucester. When the tubes were filled with moisture no oil could be forced into them, even by the heaviest pressure.

By returns from the Leith harbour works, it was shown that the average quantity of creosote absorbed by the timber was 57¾ gallons per load, or 577 lbs. weight, forced into 50 cubic feet of wood.

Piles, 14 inches square, of unprepared timber, at Lowestoft Harbour, were shown to have been eaten away to 4 inches square in four years, whilst creosoted piles, of the same dimensions, driven alongside them, were perfectly untouched: specimens of both were exhibited.

Some specimens were shown of curious coke, produced from the pitchy residue of the distillation of creosote: it was quite free from sulphur and earthy particles, and was found to be very valuable for smelting iron, for which purpose it was beginning to be largely used near Birmingham.

It appeared to be admitted that all the various processes somewhat reduced the transverse strength of the timber when dry; and the metallic salts affected at the iron bolts, or fastenings.

The natural juices of some woods did this; and a bolt was exhibited which had united beams of elm and pitch pine, and was corroded entirely away at the junction.

It was shown that on some railways in the north, unprepared yellow pine had been down, as longitudinal sleepers, for sixteen years, and was still perfectly free from decay, although its natural term had expired, by being crushed under the loads constantly travelling over it. The effect of "Green-heart" timber in resisting the attacks of worms, was particularly noticed, and it was admitted that, but for its great cost, it would be extensively used.

Experiments were mentioned, that were made at the Royal Pier, Southampton, on timber prepared by various processes; and the result there was, that the creosoted wood alone resisted the attack of the "Terebrans" with which that water was peculiarly infested.

The members were requested to aid Mr. Burt, the author of the paper, in some further experiments which he had undertaken on the subject, and to communicate to the institution all information which could elucidate the various points treated of in the paper, or alluded to in the discussion.

THE DOME OF S. SOPHIA.

At the Institute of British Architects, on Monday last, Mr. Donaldson, as Secretary of Foreign Correspondence, read extracts of a letter from the Signor Fossati, at Constantinople, in which that gentleman replied to certain queries respecting the precise dimension of the diameter of the dome of S. Sophia. He states it to be 32½ French metres, which equal 106 feet, 7.557 inches English. He accounts for the exaggerated notion usually entertained of the vastness of the church, as resulting from the smallness of its parts, which contrast the more strikingly with the effect of the mass, and advantageously add to the appearance of the size of the whole building; whereas in S. Peter's and other like buildings the details are on such a large scale as to diminish the impression, which the real extent of the edifice ought to produce. The Signor Fossati is engaged on a work of a more decidedly architectural character than the views of the mosque lately published, giving in detail exact plans and other minute parts of the Aja Sofia.

HAND-BOOK GUIDES.

This class of guides stand greatly in need of guidance themselves. Like those of Northumberland House and Sion House, that of Apsley House seems to claim for its author that more important personage than intelligent cicerone, the "housekeeper." It may be allowed to answer very well to the name of "hand-book" in one sense, inasmuch as it is merely *manufacture*,—the production of some scribe whose forte evidently does not lie in *describing*. There is nothing that amounts to intelligible description of either exterior or interior: the principal front is said to consist "of a centre and two wings, having a striking Corinthian portico!" We are assured, also, that the west or park front has in like manner "two wings," and that the centre "slightly recedes, and has four windows with a balcony." But the most surprising piece of information is, that the exterior, which I had all along considered merely passable architectural humdrum—respectably decent and dull—is actually "simple in its grandeur!"

Not having seen the interior of the mansion, I can only say that, in attempting to follow the "Guide" through it, I have felt myself quite in a mist, and almost blindfolded likewise. He converts the "*demijour*" of the staircase into darkness. He calls it a "circular" one; whereas most probably it is not a rotunda, but merely semicircular in plan; but whether it has a centre flight of stairs below, and two others branching off right and left above, is not stated. The Piccadilly drawing-room is said to be "moderate sized"—an epithet which conveys no positive idea as to its size at all. Now, it surely would have been more satisfactory, had the actual dimensions of each room been given; yet we are not so much as informed what are even those of the picture-gallery, which being, it seems, lighted from above, must occupy very nearly, if not quite, the height of two floors, and must consequently be very much loftier than the other rooms. Neither is anything said as to the particular manner in which it is so lighted, whether continuously throughout its entire length, or by separate lantern-lights.

Not to pursue these remarks any further, I will only add, that the architect appears to have omitted in his plan one of the most important rooms of all in any house—namely, a dining-room,—no mention being made of any such apartment.

Z.

FALL OF HOUSES, VICTORIA-STREET, WESTMINSTER.

On Thursday, the 20th, the front walls of two of the new houses now building in Victoria-street, Westminster, fell to the ground. The front wall of all these houses is built on a large arch, which springs from the level of the ceilings of the ground-floors. There was an inverted arch at the bottom from party-wall to party-wall. The roof was on, and a massive compo cornice was put up at top, as well as dressings to the upper windows. The roof is formed by girders and 4½ brick arches in cement, covered with asphalte to form a flat. The failure is attributed to the quantity of rain which has fallen. Others suppose that some of the girders were defective, and gave way, carrying the walls with them. A correspondent suggests that Mr. Pattison, who acts as clerk of the works there, could state the real cause. An official investigation should be made in all such cases.

GAS.

The price of gas at Salisbury is to be reduced from 8s. to 6s. 4d. a thousand cubic feet. A gas consumer at Warminster, writing to the *Wilts Mirror*, says, "We are at a loss to know why it should be 8s. in this town, where coals are much cheaper than at Salisbury. The gas consumers also complain of an inadequate supply."——Extensive alterations and improvements are announced by the St. Helier Gas Company as having been made at their works, and the local public have been informed that the price will be reduced from 7s. 6d. to 6s. on and after 31st of March next,—that is, in fact, essentially, from and after the winter of 1853-4. The *Jersey Times*, in reference to this announcement, looks to the extension of gas lighting, not only in public buildings, stores, and shops, but also in private dwellings, as a consequence of the reduction in price.——A lecture "on the chemistry of gas-light and of the various gases, &c. accompanying the distillation of coal," was delivered at the Loughborough Literary and Philosophical Society's, lately by Mr. Bernays, of Derby. The lecture-room was crowded to excess. In course of his remarks, the lecturer very properly pointed out "the importance of due ventilation in burning gas, one part by weight of well-made coal-gas producing in combustion nearly two and a-half parts by weight of the noxious carbonic acid." Mr. Bernays concluded by saying that already two important dyes were made from coal-tar; that salts of ammonia were manufactured on an extensive scale from gas-liquor; and that he considered that the time would arrive, within ten years, when the secondary products of gas production would be the primary, and the gas itself the secondary product.——Mr. W. S. Losh, of Wreay Syke, near Carlisle, has patented some improvements in the purification of coal gas: they consist mainly in the application of chloride of lead. The chloride is reduced to powder, and mixed with an equal bulk of coarsely-powdered coke, or of sawdust, in order to allow the gas to move readily through it. The mixed materials, in a damp state, are then laid upon the shelves of an ordinary dry lime purifier, and when the purifier is charged the gas is turned on, and in passing through the chloride of lead and coke, or sawdust, is deprived in a great measure of its ammonia and sulphurous components, which are decomposed and remain in combination with the chloride of lead, while

the purified gas passes on to the place where it is required for use. Two such purifiers are used in conjunction, and when one ceases to act the gas is turned on to the second, while the former one is being recharged, and so on alternately. In order to restore the saturated chloride of lead to a fit condition to be again used, it is well washed, in order to separate the ammonia, sulphur, &c. which are evaporated to dryness, and is then passed through a brake sieve, in order to rid it of the coke or sawdust which may have been used; after which the lead is treated with hydrochloric acid and converted to a chloride, which may be again used.——The superiority of the Edinburgh Gas over that of London, says the *Journal of the Society of Arts*, arises from two causes—first, from the difference of the coal used for the manufacture of gas. In Edinburgh, Cannel coal is used, which generates gas of a highly illuminating power. In London, Newcastle coal is used, which produces a very inferior quality of gas. In the second place, from the difference of the system in use. In Scotland, the coal is only suffered to remain in the retorts a sufficient time to give out its gases, attention only being paid to the quality of the gas manufactured. In London, the coal is allowed to remain a much longer time in the retorts, and by excessive baking a very weak gas is generated, of little illuminating power, and of little value for lighting purposes: indeed, it is well known that in London they are coke and gas manufacturers; in Edinburgh, only gas manufacturers; the one manufacturing light gas, the other gas light: 5 feet of Cannel coal gas will give twice as much light as 10 feet of the ordinary London gas; consequently, at the same rate of charge per 1,000 cubic feet, the one costs only half as much to produce the same quantity of light; the products of combustion, and all the disagreeable attendants on the use of poor gas being lessened to a very great extent.

CEDAR-WOOD CABINETS.

INJURIOUS EFFECTS OF RESINOUS PINE AND CEDAR.

AN interesting lecture on this subject was delivered on 11th ult. before the Royal Physical Society, at Edinburgh, by Dr. Fleming, the Professor of Natural Science in the new college of that city. Dr. Fleming had his attention turned to the subject from finding some of the specimens of a conchological cabinet covered and damaged by a sticky gum, like dissolved caoutchouc. On making further inquiries he found that others had observed similar injuries in cabinets of cedar. In the "Minutes of the Proceedings of the Institution of Civil Engineers, 27th April, 1847," in connection with the reading of a paper by Charles Frodsham, Ass. Inst. C.E. "On the Laws of Isochronism of the Balance-Spring, as connected with the Higher Order of Adjustments of Watches and Chronometers," Mr. Vulliamy mentioned the following circumstance:—"His Majesty George III. was in the habit of having small articles of cabinet-work made at the Royal Observatory, Kew Gardens. The drawers of one of these were made of cedar-wood, and in them several watches were placed, with the intention of keeping them going. In a very short time they all came to rest. The experiment was, however, repeated, but with the same result; and on examining the watches the oil was found to have been completely changed into a substance resembling gum."—Vol. vi. p. 247. The late Mr. William Strutt, of Derby, had a small collection of the minerals of Derbyshire, part of which had been locked up in a new cabinet with close-fitting cedar wood drawers. On opening them for the first time after some months, the minerals were found covered with a gummy matter, leaving a strong odour of cedar, and which was troublesome to remove: it gave to the bright surface of the crystals the appearance of having been varnished in an irregular and unskilful manner. It was obvious that the cedar had emitted a vapour which had become condensed upon the surfaces of the minerals.

Various other cases were adduced, and the lecturer thus concluded his remarks:—"From inquiries made in various quarters, I am inclined to believe that the more resinous firs and pines, as well as junipers (which yield the wood usually termed cedar), cannot be safely employed in the construction of drawers for the reception of objects of natural history. I can, however, testify that the white American fir is perfectly harmless, while it is singularly insensible to the influence of moisture or dry rot." The white American fir, too, we may here observe, is singularly free from resin, compared with other firs or pines. Is it not probable, therefore, that the resin or turpentine in other firs has something to do with the production of dry rot? This is altogether an interesting subject of inquiry. One main reason why cabinets are made of cedar is, that it is believed to be capable of preventing objects from being injured by insects; but since it appears to injure them itself, the prudence or propriety of continuing its use, or the use of resinous firs, for the interiors of cabinets, seems very doubtful.

THE BURNING OF THE CITY OF SACRAMENTO.

PROBABLY it is *because* California is the land of gold that it is also the land of fire; for, according to the ancient sages, gold was "mere consolidated fire" itself, and hence was dedicated to Sol, and so named. Sacramento seems, at all events, to be dedicated to Sol, or Fire: like San Francisco, it is or was a wooden city; and, in a climate of which eight months in the year are dry, and several windy, the influence of "Sol" over such a city must be omnipotent. The soil is excellently adapted, it is said, to the formation of bricks, and yet the gold-hunting speculators feel it too *slow* work to await the digging, shaping, burning, and building of such materials, and advisedly risk the upshot in timber. It would appear, moreover, that they calculate shrewdly and correctly; for we are told that, "strange as it may appear, since the fire, the vacant lots now readily let for more than when the buildings were upon them!" We hope, however, that this is significant of a consciousness that wooden structures were but lumber after all, and being thus economically cleared away, have left the building sites ready for more substantial structures. And, in fact, it is anticipated that in course of a year there will be a far more worthy successor in the shoes of the old—five-year-old—Sacramento, or at least on its site. The burning of a town of 8,000 inhabitants—especially a wooden one—must have been a splendid sight. The whole conflagration was over in less than four hours, when 1,500 houses were turned into ashes and burning timbers, and 2,000,000*l.* worth of property consumed. This occurrence took place a few weeks since; and it is said that before the morning dawn had succeeded the night of conflagration, hundreds were at work re-erecting buildings amongst the hot ashes, the streets were jammed with carts and horses, timber, tools, and workmen; and some long-headed speculators were actually steaming to San Francisco, and over-reaching each other by the way, in order to buy up all the spare wood in that town ere the news could reach it!

RAILWAY MATTERS.

Removal of Obstructions in Front of a Train.—A correspondent, "T. M. F." suggests that in place of the "guard" which is placed in front of the engine to clear the line of any obstruction, there should be a wheel, so connected with the fore-wheel of the engine as to revolve in a contrary direction to it, and that on the tire there should be projections slightly turned up, to take hold of the obstruction and to remove and clear it from the line, which he believes it would effectually do if the "clearing-wheels" were placed one on, or over, each rail, and to revolve within an inch of it, and not parallel with it, but the outer edge to project 2 inches from the rail outwards, and 6 inches to 8 inches inwards. The best size for the clearing-wheels he thinks would be 20 inches in diameter, with projections on the rim about 1¼ inch long, and 16 inches of the 20 inches which constitute the diameter to precede the engine, the other 4 inches being left for the fore-wheel of the engine to work upon. Perhaps an eccentric or oval movement in the outward direction indicated, with blunted projections, or buffers, would be preferable to a circular, which might send some obstructions whirling round among the carriages of the train, in place of clearing them fairly outwards.

Railways round London.—It appears from a compilation by Mr. W. R. Botham, of the London and North-Western Railway, that twenty-four companies have deposited their plans, &c. at the Private Bill-office, and intend to apply to Parliament for power to make twenty-four new lines of railway within a circle of 20 miles round London. Nine of the proposed railways are within a circle of 5 miles from the General Post-office, and ten are within a circle of 10 miles. The existence of these new schemes is attributed to the success attending the East and West India Dock and Birmingham Junction Railway (North London Railway); the re-erection of the Crystal Palace, at Sydenham; and the increasing traffic in the streets of the metropolis. These schemes would involve an aggregate capital of about 6,000,000*l.* together with the usual borrowing powers of one-third, or 2,000,000*l.* making 8,000,000*l.*

The Grand Central Station at Birmingham.—This immense erection, which has been in the course of construction for many months past, is fast approaching completion. The offices, hotel, &c. are being proceeded with by Messrs. Branson and Gwyther, and the first section of a rib arch for the vast roof has been raised. This roof, according to the *Times*, will be of larger dimensions than any other in the world. It will be 1,080 feet long, with a span of no less than 212 feet across, unsupported by a single pillar, except at either side. The rib arches, of which a portion has been erected, under the direction of Mr. Phillips, superintendent of works for Messrs. Fox, Henderson, and Company, are each composed of three sections, and the weight of each rib is 25 tons. There are forty-five of these in the roof, at distances of 24 feet apart, and at a height of 75 feet from the rails: nevertheless, according to the *Birmingham Journal*, they look light and fragile. The difficulties have been enhanced by the circumstance that no interference with the traffic on the Stour Valley line could take place. Consequently, a gigantic traversing scaffolding has been constructed, reaching from one side of the station to the other, and of the most ponderous character, by which the work is carried on without blocking up the rails at any point. The roof will be filled with fluted glass, of which a vast quantity will be used, and which is to be supplied by Messrs. Chance. It is expected that the station will be finished in July.

A Metropolitan Tunnel Railway.—A project, it is said, which has been some time in preparation, is likely soon to be brought forward, for a railway from the City to Bayswater by means of a tunnel, following the line of the New-road.

Sinking of an Embankment.—An embankment on the Great Northern line, near Essendine station, north of Peterborough, sank, last week, under the weight of an engine, which it nearly buried. Passengers had to be transferred to a new train by omnibus, which stuck in the midst of the flood, that still covers the country in various districts. The passengers were up to the knees in water while in the omnibus.

Responsibility of Companies to Passengers.—An action of damages against the Edinburgh, Perth, and Dundee Company, brought for not taking up a passenger at Kirkaldy station, where he and others regularly booked for a train, which, being late, could not stop at this station at all, has resulted in the company being found liable in 8*l.* 6s. 8d. the sum craved as damages, besides all expenses. The other passengers who were to share the expenses of the action, are, it is stated, to pursue the company in the same manner.

BUILDING IN LIVERPOOL.—The following is a statement of the number of dwelling-houses erected in 1852 in the Parliamentary borough:—Under 12*l.* per annum, 223; 12*l.* to 25*l.* 727; 25*l.* to 35*l.* 76; upwards of 35*l.* 110; total, 1,136. The number erected in each year since 1838 was as follows:—1838, 1,052; 1839, 997; 1840, 1,576; 1841, 1,761; 1842, 2,027; 1843, 1,890; 1844, 2,450; 1845, 3,728; 1846, 3,460; 1847, 1,220; 1848, 656; 1849, 446; 1850, 420; 1851, 837; 1852, 1,136: total, 23,156.

AMERICAN NEWS.

Death of Mr. Greenough, the Artist.—We regret to observe that this eminent artist died on 18th ult. Horatio Greenough was born at Boston in 1805, and graduated at Harvard in 1825. While at college, he furnished the design for the Bunker-hill monument; and immediately set out for Italy in order to devote himself to the study of his chosen art. A portion of 1827-8 he spent in America, and again returned to Italy, and his time since that date had been divided between that classic land and the land of his nativity. At the period of his death he was labouring, in conjunction with Mr. H. K. Brown, upon an equestrian statue of Washington. Among Mr. Greenough's productions are portraits of President Quincy and John Q. Adams; a "Group of Cherubs," for J. Fenimore Cooper; a portrait of that author; "Medora," for Mr. Robert Gilmore, of Baltimore; the colossal statue of Washington, in that city; and a colossal group, entitled, "The Rescue," emblematic of the struggle between the Anglo-Saxon and aboriginal races on this continent.

Niagara a Mill-dam.—The inhabitants of the Falls of Niagara, and Eastern capitalists, are about to put to practical use this immense water-power, now nearly useless. The *Lockport Courier* says:—"We are informed that an Eastern company has been organised for the purpose of constructing a canal at Niagara Falls. The canal is to commence about half a mile above the Falls, and pass directly through the village at the Falls, and empty, of course, into the river below the cataract." It is not said to what special purpose the power is to be applied.

New Amphitheatre at New York.—Franconi is about erecting a magnificent building in New York, 1,200 feet in circumference, for the full display of his forces—men, horses, dogs, ostriches, reindeer, and monkeys.

New Orleans Hotels.—Mr. N. P. Willis has some "Inkings Over of Pencillings on a Tour for Health," in the "Home Journal," in one of which, dated New Orleans, he gives the following account of the hotels which he points out as a peculiar feature of this "Venice of America," as he calls it:—"The Hotel St. Louis (the principal one after the burning down of the St. Charles), is an immense structure on the scale of the Astor-house of New York, but built around a lofty rotunda, that was once, I believe, the City Exchange. The towering dome of this imposing architectural centre reaches to the roof, and is surrounded with corridors and a gallery; and the hotel (an excellently kept and highly luxurious one), seems quite secondary to it, in its magnificent use as a 'bar-room.' It is paved with marble: a marble counter extends around one-half of its circular area, and so vast is the interior, that the half-moon of busy bar-keepers, seen from the opposite gallery, as they stand and manipulate behind their twinkling wilderness of decanters, looks like a juleporama, performed by dwarfs,—the murmur of the gliding ice and the aroma of fragrant mint betraying their occupation, but their features quite undistinguishable in the distance. New Orleans is studded all over with these temples of drink—none quite as architecturally imposing as the St. Louis dome, but all sumptuously splendid and costly. The walls are hung with costly paintings, and all that damask and velvet can do for comfort, and gilding and mahogany for splendour, is lavishly done. The average receipts of any one of the fashionable drinking saloons may be set down at 200 dollars a day. A gentleman's expenses, for the inevitable drinks with friends and acquaintances, average from two to three dollars per diem. A sumptuous lunch of turtle-soup, &c. is furnished gratis! at noon, to attract customers—a man getting more than the worth of his money, of course, who lunches and drinks for sixpence; but, the proprietor finding his profit in the few, who eat, in comparison with the many who drink, at that hour, and in the policy of anything which will add to the repute of the place, and draw a crowd. The rivalry of these drinking palaces makes a yearly increase of magnificence in their luxuries and appointments, which seems to promise that the Arts shall be tributary, and the city be largely indebted to them for its splendour."

"HOMES AND PATRIOTISM."

"Homes are our province."—*Builder*, Vol. XI. p. 45.

"That the amalgamated engineers who emigrated to France have patriotically lent a lift to French steam-engine manufacture appears pretty plain."—*Ibid.*

WHAT constitutes a home and patriotism?

It is not merely the building we chance to dwell in, or the furniture in the dwelling. No; a home is where there is mutual love and interest, the place and company where we enjoy the largest share of happiness. Is a man under an obligation to love and respect the country, and the people of a country, he is born in? If so, a man that is born a slave, and kept a slave, must love the country, the people, and the institutions of the country that condemns him to slavery from his birth to his death: it is an absurdity.

What is a slave? There are many kinds of slaves (as may be perceived by the recriminations of the ladies of Stafford House and America, where each endeavours to cover the black spot in their own character by exhibiting all the blackness they can find in the other's, forgetting that two blacks will not make one white. They should have the grant of Burn's supplication—"O, that some power wad the giftie gie us, to see oursel'es as ithers see us)." A slave is a person who is forced by others to labour or to do anything against his will, that is not mutually for his interest as it is for theirs. A person is a slave to himself when his passions or his ignorance induce him to acts that militate against his own happiness. No; patriotism is only a moral obligation on those who truly have homes in a country whose institutions give reciprocity of interests to the whole. In the struggle of the amalgamated engineers and their employers you stood neutral, and recommended mutual concessions and forbearance, for which I thank you. There were faults on both sides: that which was wrong in the men was extenuated by circumstances. I am an antimonopolist in every sense. I consider every man should be allowed to compete and labour at whatever he is able to do. The engineers went against this principle in trying to prevent the labourers from working at the machines, but then the employing class have the monopoly of making the laws affecting the lives and labour of the employed: therefore they had no alternative but to form a monopoly or succumb: all the other desires of the men were highly honourable: wrong can never be right, nor between the right and the wrong can there be any just medium. One evil sometimes begets another, and there may be, and I believe are, extenuating circumstances in the policy of making an evil to counteract one of prior existence that cannot then be eradicated; though I think it sounder in principle and policy to endure the evil we have until we can remove it than to create another to counteract it, the consequence of which we cannot tell. You print *patriotically* in italics, as a sarcasm, meaning the reverse of what the letters spell; but, sir, where was the moral obligation of patriotism on the amalgamated engineers? was there an identity of interest between them and their employers? did the institutions of their country give them mutual protection? Before we condemn men for injustice to their country, justice demands that we should consider if their country has been just to them, for it is only where justice is rendered that justice can be demanded.

If homes are your province, whatever is allowed to be done by law, or for the want of proper laws to prevent it being done, for making dwellings truly homes, is in your province: if dwellings should be a home of enjoyment, the essentials for happiness should be there. The first is, the health of the individual. The health of the people is the first requirement of the law of mutual interests. The first essential for health is pure air: no one should be denied it. Next necessary is pure water for consumption, and plenty of it for cleanliness. No man or body of men should have a monopoly in its supply. Good sewerage and facility for clearing away all animal and vegetable refuse. Have we these necessaries? and why have we not them? Not because there is not sufficient intelligence or ability in the people to provide them? No. It is because there are vested interests in existence incompatible with the comfort of the people, *i.e.* those who have but a common interest: those who have a separate interest are not the people, but from the people holders of invested interest;—because those who have vested interest have the power of making the laws affecting the lives and property of all; while the great bulk of those who have but a common interest in mutual justice have no voice in making these laws, though they are subjected to them.

If homes are your province, then ethics and politics must be your province while right morals and right laws are necessary to make dwellings homes.

A WORKING MAN.

Miscellanea.

THE ROYAL INSTITUTION.—The first of the Friday evening meetings was held at the Royal Institution, in Albemarle-street, on the 21st, when Professor Faraday made some Observations on Magnetic Forces; and a large crowd, including a numerous body of ladies, assembled to hear him. In that clear and easy manner which divests every subject of its difficulties, the professor described an elaborate and beautiful arrangement devised by himself for measuring the magnetic force of different substances in different media. In the course of his address he showed the value of continued observations in a striking manner, by bringing forward the extraordinary facts noticed as to spots on the sun, and the variation of the magnetic needle. It has been shown that the number of spots observable is different in different years, and that these regularly increase in number up to the fifth year, and then decline to the tenth year, when the advance again commences. An entirely different set of observers have found that the variations of the needle accumulate for five years, and then decline for five years; and, strange to say, *the year of the maximum and the year of the minimum correspond in the two cases.*

MR. PEARSON'S CITY TERMINUS SCHEME.—At the first meeting of the newly-elected members of the Court of Common Council since St. Thomas's day, as usual, a change came over the spirit of the previous dream, shall we call it, of general improvements for the City, which seem destined to be ever varying and never realised. After some discussion as to the ways and means for a good road from Battle-bridge to King's-cross, and something like a reproach to the City and Clerkenwell Improvements Committee that they were clearing away ground at the north end of the new street for Mr. Pearson's railway terminus, a charge which was virtuously and indignantly denied on the part of the committee, Mr. H. L. Taylor moved a resolution to the effect that the Fleet Valley Improvement Committee, appointed by the corporation on the discussion of Mr. Pearson's scheme, be dissolved, after being called on to make a final report. Mr. Taylor's feelings seemed to be anything rather than favourable to the practicability of Mr. Pearson's scheme, but his hostility to the committee was also based on their neglect of one understood part of that scheme, namely, the filling up of the Holborn ravine, regarding which, as he remarked, although a main element in the scheme, no provision whatever appeared to be made in the bill before Parliament for the incorporation of the Grand Central Terminus Company. It having been suggested that the resolution, as it stood, would lessen the control of the court over the condemned committee, it was altered in various respects, and after various remarks, chiefly unfavourable to the scheme which the committee was appointed to consider or promote, the resolution was passed so far as regarded the call for their report, and with the addendum "That in the mean time the committee proceed no farther in the matter."

METROPOLITAN COMMISSION OF SEWERS.—A special court was held on the 20th inst. when the secretary read the usual financial statement, showing a balance of 21,161*l.* 1s. 1d. in favour of the commission; and on a motion being made to receive the recommendations of the general committee, Major Dawson said that the public should be informed, in presenting a list of works to be executed on these recommendations, that they were the first fruits of the rates recently collected. At the opening of the commission he had stated that the average balance, after collecting the rates then due, would amount to 163,000*l.* but deducting ordinary expenditure, interest on permanent loans, cleansing and repairs of sewers, and expenses of officers, 48,000*l.* it would leave a sum of 115,000*l.* to be expended in new works in their twenty-three separate sewerage districts. They had now levied the rates fully to the extent of their powers on every district under their control, and the average fund available for ordinary works, including the 20,000*l.* recently borrowed, amounted to 135,000*l.*

It had also been stated that there were works of a less costly description in different districts ordered by the court, and not executed for want of funds, estimated at 244,000*l.* but which he had since ascertained would amount to little short of 300,000*l.* It was, therefore, very evident, that their available balance was inadequate even to the execution of all their minor works, consequently they had given their attention to a selection of such of them as fell the most urgently upon them, having regard to the extent of the average balance in each district; reserving about one-fourth of such sum in hand to provide for unexpected or pressing demands. It was some of these works that they were now about to order to the amount of 28,000*l.* and others he hoped would be brought forward at the next court to the extent of 100,000*l.* Major Dawson concluded by moving that works be executed in the divisions named to the amount stated:—In the Western Division of Westminster Sewers, contract No. 1, 4,586*l.* 15s. 6d.; contract No. 2, 6,568*l.* 10s. 6d.; contract No. 3, 3,227*l.* In the Eastern Division of Westminster Sewers, in one contract, 7,755*l.* 14s. In the Holborn Division, contract No. 1, 7,203*l.*; contract No. 2, 3,509*l.* 15s. 4d.; making a total of 28,268*l.* 10s. 10d. The motion was carried unanimously. Mr. Hunt then moved that, instead of competition being sought through advertisements to the builders at large, the principal firms of the metropolis be invited to offer themselves as competitors for the works, which motion was agreed to.

Sunderland Baths and Wash-houses.—The *Sunderland News* says, "Unlike many other establishments of the same nature in other parts of the kingdom, and contrary to the most sanguine expectations of the baths and wash-houses' advocates in Sunderland, the Sunderland establishment has been self-sustaining from the very beginning. Up to 1852 it had been opened a year and nine months, and during that period 31,608 persons have used the baths, and 14,367 persons the wash-houses. The receipts during the same period have been, from the bath department, 344*l.* 18s. 8s. and from the washing department, 340*l.* 5s. 1d. making a total receipt of 685*l.* 8s. 4d. Every one must admit that all these cleansing operations must have been of great advantage to the borough; and that having been supplied at the sole cost of those who immediately reaped the advantage, without any cost to the ratepayers for the great and indirect advantages of which they partake, a great good has been accomplished. The current expenditure for the last half-year is 169*l.* 11s. 8d. to which, if we add 10s. per week, or 13*l.* for repairs, we shall have a current expenditure for the half-year of 182*l.* 11s. 8d. against an income of 215*l.* 18s. 9d. having a clear *gain* of 33*l.* 7s. 1d. which, but for a fortnight's shut up, would have been 18*l.* more, or 51*l.* 7s. 1d. or an annual *profit* of 102*l.* 14s. 2d. The average weekly receipts during the nine months the establishment was open in 1851 was 6*l.* 12s. 6d. but this average during the corresponding nine months of 1852 rose to a fraction over 9*l.*"

Patent Perforated Bricks.—Some experiments, says the Huntingdon correspondent of a contemporary, have recently been made to test the strength of the perforated brick compared with the solid one. This has been done under personal observation of Mr. Allen Ransome, of the Orwel Iron Works, Ipswich, and the result is shown to be, that the perforated bricks will bear nearly four times the pressure of the ordinary solid ones. One of the former, made of Huntingdonshire clay, bore a pressure of 31 cwt. per square inch, or 58 tons 18 cwt. on the whole surface of the brick, and when the pressure was removed, the brick was found to be broken in the middle, but not at all crushed. The solid ones tried were of the Suffolk clay, and crushed to pieces with 8¼ cwt. per square inch—equal to 16 tons 12 cwt. on the whole surface of brick. Our readers will, of course, not suppose that this difference is all due to the perforations.

Land and House Speculation in Australia.—"Two years ago," says the *Melbourne Herald*, "a solicitor bought 100 acres of land on the other side of the Yarra. The terms were 500*l.* at five years' credit, being eight per cent. interest. Last week this property, less twelve allotments (which the proprietor has reserved to himself), was divided into building lots, and sold for 5,000*l.* And parties who purchased at the sale are re-selling at 100 per cent. profit already.—Geelong Land Sale.—Not a single lot was withdrawn, and many allotments realised very high prices; the Ballarat allotments, of two roods each, ranging from 80*l.* to 270*l.*—Value of Town Property.—A gentleman of our acquaintance, who about two years since erected premises near the wharf, which, together with the land upon which they were built, cost 2,600*l.* has, within the last few days, been offered 9,800*l.* cash down for them, and has refused the offer, from a conviction that town property has not yet attained its maximum value."

English and Irish Magnetic Telegraph Company.—The first general meeting of this company took place last week, at their offices, 1, North John-street, Liverpool; present, Mr. Joseph C. Ewart, chairman, Mr. E. Cropper, deputy-chairman, and the other directors. The royal charter of the company was exhibited. The engineer's report was then read, giving the number of miles of telegraphic communication constructed and now in full operation under Mr. Henley's patent, the lines nearly completed, and the contracts in course of progress connecting the following towns:—Lines completed between Liverpool, Wigan, Bolton, and Manchester; Preston, Blackburn, Accrington, Colne, Bury, and Manchester; Edinburgh, Greenock, Paisley, Glasgow, and Carlisle; Dublin, Mullingar, Athlone, Ballinasloe, and Galway. Contracted for and in course of construction between London, Birmingham, Wolverhampton, Manchester, and Liverpool; Donaghadee, Belfast, Lisburn, Moira, Lurgan, Armagh, Newry, Dundalk, Drogheda, Navan, Dublin, Kildare, Carlow, Kilkenny, Tipperary, and Cork. The great trunk line between London, Liverpool, and Manchester, will consist of ten wires, thoroughly insulated and protected, at a depth of 2 feet underground, along the old mail roads. The line between Preston and Portpatrick will, when laid down, with the submarine cable, complete the company's chain of communication, and connect together the three capitals of the United Kingdom, forming about 1,200 miles, exclusive of the lines which the company have constructed for railway accommodation. Under this company's patent, the expense of voltaic apparatus is said to be entirely obviated, natural magnets supplying the requisite power of communication without any artificial electrical excitement whatever; so that the public ought now to have the benefit of decidedly cheap telegraphic communication, all the more especially, perhaps, that the old mail roads of the country have been made so generally available for its ramifications.

Encroachment of the Sea at Dover.—Serious concern is felt on account of the continued inroads of the sea and washing away of the shingle of late at Dover; and the harbour engineer, Mr. Walker, has been waited on by a deputation of the Local Board of Health, on the part of the inhabitants, whose complaint has been that although it was well known when the harbour of refuge was projected that the course of the shingle would be stopped, no efficient jetties or groins were placed to retain it, and the shingle was allowed to escape, stone walls being erected in the place of the required jetties; that if a jetty were projected in the bay, of sufficient length to retain the shingle and to save the bathing-houses, and not too long to prevent the shingle from rounding the point, in order to protect the eastern side, the inhabitants would feel more satisfied. Mr. Walker inquired if a jetty near the battery would satisfy the inhabitants, in addition to the present temporary erection? The deputation thought that that would, for the present, satisfy the requirements of the town. The engineer promised to give the subject his serious consideration.

Banbury Waterworks and Drainage.—At a meeting of the Local Board of Health some correspondence was lately read, and explanations given, from which it appears that Mr. R. Stephenson having expressed a conviction that the detailed plans of towns required by the Central Board of Health prior to giving their sanction to the improvements proposed from time to time by Local Boards, involve a very unnecessary expenditure of money, the Central Board had eventually modified their requirements in this respect. The Banbury Board resolved, therefore, to secure an intimation to that effect from the Central Board, so far as regarded Banbury, as they were anxious to proceed with preliminaries. A long discussion also took place on the question whether Mr. Hawksley be engaged as their chief engineer. Mr. Lloyd, an assistant of Mr. R. Stephenson's, who had been employed, was meanwhile to be requested to lodge his report within ten days.

Dangerous State of London-bridge Steps.—In a recent inquest on the death of a navigator from falling off these steps into the water, the jury strongly recommended that a bar should be placed at the first landing to prevent persons falling into the water.

The Monument at Wellington.—At the meeting announced to be held at Taunton for the purpose of considering the best means of restoring and preserving the monument erected many years since at Wellington, in Somerset, to the late Duke of Wellington, it was unanimously resolved, on the motion of Lord Portman, Lord Lieutenant of the county, supported by nearly all the leading men of the county, to restore the column, and for that purpose a committee was appointed and the maximum subscription fixed at 20*l.* Nearly 400*l.* were collected in the room. Between 800*l.* and 900*l.* will be required. The subscriptions are not to be limited to the county of Somerset.

Annual Returns of Fires in London.—From Mr. Braidwood's return of fires within the metropolitan district attended by the London firemen during the past twelve months, it appears that the total number of fires which occurred was 923, which are divided into two classes—viz. premises totally destroyed and considerably damaged, and those slightly injured: of the former there were 263, of the latter 660. There were also 93 false alarms, and the engines were called 89 times to what turned out to be chimneys on fire, making 182 extra calls for assistance. The engines had attended at 23 fires in which deaths had occurred.

Architectural Students, Royal Academy.—At a council held on the 17th inst. the following gentlemen were admitted students in architecture:—Messrs. George Saunders, J. W. Horne, Thomas Wildash, William Kerby, J. H. Metcalfe, Samuel Hewitt, F. M. Pfiel, William Tasker.

Mons. Hittorff, architect of the church of S. Vincent de Paul, of the *Cirques*, and other buildings at Paris, and Honorary and Corresponding Member of the Institute of British Architects, was elected, on Saturday last, a member of the Institute of France, in the class of fine arts. We have in preparation a complete series of illustrations of his last work, the great "Napoleon Circus," and shall speedily place them before our readers.

Drainage Boards.—Speaking of the urgent necessity which exists for improving the present defective arterial drainage of many important districts, the *Mark Lane Express* says—"Many commissions of drainage will require to be remodelled, both as regards their constitution and their jurisdiction. With respect to jurisdiction, it is essential that its bounds should not be territorial but natural; not limited to hundreds or counties, but co-extensive with the whole catchment basin drained by a river and its tributaries, over whatever counties or parts of counties it may extend. Along the valleys of our principal rivers there are many separate boards of drainage, all working at a disadvantage, if they work at all, because they work without any combined system of operations. The proprietors near the head waters lay their own lands dry at the expense of those immediately below them. These cannot relieve themselves of the additional waters poured down upon them, because they have no command over the outfall, which is under the jurisdiction of other commissioners, who regard—and with their present limited powers, very properly regard—only the immediate interests of the locality under their special care. These local boards not only are without the power of systematic action, but they are encumbered with the expense of more than one staff where one would suffice. Their local establishments, generally inefficient, cost more than the sum which would command the best professional services for a large district.

The Geological Survey of the Country.—The geological surveys of the United Kingdom, under the direction of Sir H. T. De la Beche, are rapidly progressing towards completion. The counties already published are Brecknock, Cardigan, Cornwall, Carmarthen, Carnarvon, Devon, Glamorgan, Radnor, Merioneth, Monmouth, Montgomery, Pembroke, Somerset; and in Ireland, Carlow, Kildare, Dublin, Wicklow, and Wexford. The counties in part completed are Dorset, Gloucester, Hereford, Denbigh, Salop, Brecon, Flint, Angelsea, Lancaster, Chester, Derby, and the West Riding of Yorkshire. To this may be added the Isle of Wight, completed, but not yet published, and North and South Staffordshire, which will be ready for publication, by Messrs. Longman, in the course of a few days. These maps are founded upon those of the Ordnance survey, coloured from actual survey by persons employed in connection with the Museum of Geology. The boundaries of each formation and subdivision—of the various stratifications—of slate, freestone, limestone, gypsum, coal, and mineral, with their outcrop or dislocation, according to the *Morning Chronicle*, are traced on these maps with the greatest minuteness and accuracy.

TO CORRESPONDENTS.

The conclusion of Mr. Picton's Paper is unavoidably postponed with some others.

"M. S." "M. P." ("*M. T.*" would have been more appropriate), "H. E." "T. G." (we do not recollect the communications referred to. In the present case, he is misinformed), "H. H. R." "C. W." (thanks), "T. A." (we are unable to assist), "R. L. S." "W. H. A." "R. K." (good wishes for recovery), "J. T. C." "R. P. P." "Dr. D." "J. M'G." "W. H." (address a letter to "Chairman of the Committee," at York), "K. W. F." (we do not communicate on "hearsay"), "O. H." "G. W." "A. R. H." "W. H." (next week), "T. O. jun." (we scarcely understand the extracts), "Argus" "P. P." (we have not room for *circulars*), "C. H. S." (next week), "A. R. H." "S. B." Chester, "J. E." "P. J. T." "H. H." "Antiquated Member," "H. P." "A. F. M." (we shall), "W. B. C." "T. T." "G. T. J." "Carlow" (must be wrong as to the names), "Architectural Botany" (will appear), "London Plasterer" (shall appear), "J. B." "G. C." "E." "H. G. M."

"*Books and Addresses*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

GUIZOT ON THE FINE ARTS.
This day is published, medium 8vo. cloth, price 14s.

THE FINE ARTS, their Nature and Relations, with detailed Criticisms on certain Pictures of the Italian and French Schools.
By M. GUIZOT.
Translated from the French, with the assistance of the Author, by GEORGE GROVE; with Seventeen Illustrations drawn on Wood, by GEORGE SCHARF, Jun.
London: THOMAS BOSWORTH, 215, Regent-street.

HOW TO SUCCEED IN BUSINESS.
This day is published, price 4s. 6d. or by post 5s.

A PRACTICAL TREATISE on BUSINESS; or, How to Get Money; with an Inquiry into the Chances of Success, and Causes of Failure in Business.
By EDWIN T. FREEDLY.
"Well worthy of study."—*Daily News.*
London: THOMAS BOSWORTH, 215, Regent-street.

ENGINEER PUPIL.—An Old-established Firm employing about 100 hands, have a VACANCY for a well-educated Youth.—For address and terms apply to S. R. P. box 53, Post-office, Bath.

A GOOD STAIRCASE HAND WANTED, in the country, for a month.—Apply, by letter, to Mr. GEORGE COOTE, Surveyor, Witham, Essex.

AN APPRENTICE WANTED (age about sixteen years) to the LITHOGRAPHIC PRINTING.—Apply at C. MOODY'S Lithographic Establishment, 257, High Holborn.

AN experienced ASSISTANT is required by an Architect in extensive practice.—He must be thoroughly conversant with the general routine of Office Business, a neat Draughtsman, able to take off Quantities, &c.—One with a knowledge of Surveying, &c. preferred.—Address (post-paid), stating salary and reference, to A. K. Messrs. Tatchell and Co.'s News Agents, Stamford-lane, London.

AN ENGINE DRIVER WANTED.—Inquire at 168, Drury-lane.

SHOP FOREMAN WANTED, to take the Superintendence of about Forty Men.—Apply, by paid letter, to Mr. FAULKNER, 63, St. Martin's-le-Grand.

AN ARCHITECT in the Country, extensively engaged in Church Architecture, REQUIRES ASSISTANCE, and would be glad to meet with a gentleman who would be content with a moderate salary, on account of the improvement and other advantages which the present opportunity would afford him. He must have a tolerable knowledge of Gothic, and be acquainted with Perspective.—Address, stating lowest terms, with full particulars, to M. A. Post-office, Crewkerne, Somerset.

TO POTTERS, &c.

WANTED, near London, a STEADY MAN. He must be a good potter and pipe and tile maker, and thoroughly understand glazing.—Apply, by letter, to J. O. (stating particulars), to the Office of "The Builder," 1, York-street, Covent-garden.

WANTED, an ARCHITECTURAL DRAUGHTSMAN, having a thorough knowledge of measuring, estimating, and drawing up specifications.—Address, stating age and salary expected, Y. Z. Office of "The Builder," 1, York-street, Covent-garden.

TO BUILDERS' FOREMEN.

WANTED, an active, experienced person as GENERAL FOREMAN, to undertake the superintendence of works, comprising alterations and general repairs. A person by trade a carpenter preferred.—Address, stating age, particulars, salary required, and where last employed, to X. Y. Z. Office of "The Builder," 1, York-street, Covent Garden.

WANTED, a quick and active YOUTH, in a Builder's Office. He must write a good hand; one accustomed to the trade and a knowledge of drawing would be preferred.—Apply at 29, Upper Stamford-street, Lambeth, between the hours of nine and ten in the morning, and seven and nine in the evening.

WANTED, a respectable, industrious, middle-aged MAN, to reside at and conduct the working of an extensive Granite Quarry, in South Devon; he must be a man of experience and with high testimonials.—Apply by letter to A. B. Granite, Office of "The Builder," 1, York-street, Covent-garden.

TO BUILDERS' CLERKS.

WANTED, a good practical CLERK, to look after out-door works, to measure up same, and fill up his time in the office. None need apply unless they have been accustomed to such work. One competent to prepare designs and specifications preferred.—Address, stating terms, &c. to R. G. A. Office of "The Builder," 1, York-street, Covent-garden.

TO CLERKS.

WANTED, by a Surveyor, an ASSISTANT, for five or six weeks; he must be well acquainted with bookkeeping. It is indispensable that he writes a good hand.—Address by letter, stating terms, to J. B. BRASSINGTON, Stationer, High-street, Kensington.

TO BUILDERS, GLAZIERS, PAINTERS, AND OTHERS.

WANTED, by a Young Man, a SITUATION as FOREMAN, or a three-branch place—plumber, painter, and glazier. No objection to town or country. He has been used to keep books.—Address, post-paid, W. L. 5, Church-court, Kensington.

TO PLUMBERS, PAINTERS, AND OTHERS.

WANTED, by a YOUNG MAN, a SITUATION as Plumber, Painter, Glazier, and Gasfitter.—Direct to G. E. 40, Beech-street, City.—No objection to a situation in the country, or to go abroad.

TO ARCHITECTS, &c.

AN EXPERIENCED ASSISTANT, with a thorough knowledge of Ecclesiastical and Italian Architecture, preparing finished and working Drawings, Specifications, and general routine of business, is desirous of meeting with a SITUATION.—Address, H. G., 18, Bridge-street, Westminster.

TO ARCHITECTS, SURVEYORS, BUILDERS, &c.

AN experienced ASSISTANT is desirous of an ENGAGEMENT either in office or on the works.—Address to E. F. No. 8, Jonson's-place, Harrow-road.

TO ARCHITECTS AND BUILDING CONTRACTORS.

AN active Person, of considerable experience, aged 39, is open to an ENGAGEMENT as a SUPERINTENDANT of WORKS, or as out-door MANAGER to a BUILDING FIRM. He is a good draughtsman, and is thoroughly conversant with every branch of the building trade, both theoretically and practically, having superintended extensive works, both as clerk of works and as a contractor, and in both cases had the management of a large number of men. He is fully competent to measure and square up accounts; also to prepare detail drawings, specifications, estimates, and take out quantities, &c. &c. Unexceptionable references can be given, both to architects and builders.—Address, A. B. No. 5, Portland-place, Borough-road.

TO ARCHITECTS, &c.

THE Advertiser (a Young Man) having some spare time either in the day or evening, would be glad to meet with EMPLOYMENT to assist in an Architect's Office, in case of press of business or otherwise. Has been accustomed to get up competition and working drawings; and can refer to his present employer, with whom he has been for several years, and with whose permission he inserts this.—Address, C. K. No. 4, Castle-street East, Oxford-street.

TO CONTRACTORS, BUILDERS, AND OTHERS.

A GENTLEMAN, practically experienced in all branches of railway works, is open to an ENGAGEMENT as ENGINEER, SURVEYOR, SUPERINTENDENT of WORK, or any such situation where his services will be useful. The highest references can be given.—Address, A. Z. 129, Oxford-street.

A YOUNG MAN, aged 20, who will shortly complete an apprenticeship of five years in an Architect and Surveyor's office, is desirous of a SITUATION in a BUILDER'S or SURVEYOR'S OFFICE. He is a good draughtsman, accustomed to make working drawings and specifications, and has had practice in land-surveying, taking plans, and laying out building ground. As his object is improvement, a moderate salary only will be required.—Apply by letter to X. B., Messrs. Mummery, 433, Oxford-street.

PARTNERSHIP.—A Gentleman, who can command from 2,000*l.* to 3,000*l.* is desirous of Joining an Established Manufacturing Business (Mechanical preferred). The strictest investigation will be required, and Principals only treated with.—Address, W. S. B. Cooke and Whitley, 1, Bouverie-street, Fleet-street, London.

MASTER PLUMBERS, BUILDERS, &c. wanting JOURNEYMEN PLUMBERS for town or country may be suited by making application at the Plumbers' West End Society House, per Mr. WOODS, Red Lion, Old Cavendish-street, Oxford-street, M. HARRISON, Sec.

ORPHAN WORKING-SCHOOL, HAVERSTOCK-HILL ESTATE.—The Committee having carefully examined the plans sent in for laying out the above property, have awarded the first premium of 50*l.* to those marked 7 in a triangle; and the second premium of 25*l.* to those under the motto "Si Fortuna Juvat," as being in their opinion the most suitable to the purposes required. The other plans will be returned to the several parties with their letters unopened, on a proper description of the same being given to the secretary.
JOSEPH SOUL, Secretary.
Office, 32, Ludgate-hill, Jan. 26, 1853.

CIVIL ENGINEERING and SURVEYING.—UNIVERSITY COLLEGE, LONDON.—Professor HARMAR H. LEWIS, A.M. will COMMENCE his COURSE, on WEDNESDAY, 2nd FEBRUARY, at SIX o'clock p.m.
The subsequent Lectures will be delivered during the months of February, March, April, and May, as follows:—
CIVIL ENGINEERING.—On Mondays, Wednesdays, and Thursdays, First Division, from Six to Seven p.m.; Second Division, from a Quarter past Seven to a Quarter-past Eight, p.m.
SURVEYING.—At times to be fixed at a meeting of the class, on Tuesday, the 8th February, at Eleven o'clock a.m.
Fees for the Class of Engineering, each division, 5*l.*; for both divisions in one payment, 9*l.* Surveying—Students of the Class of Engineering, 2*l.*; others, 3*l.*
JOHN HOPPUS, Ph. D. Dean of the Faculty of Arts and Laws.
CHAS. C. ATKINSON, Secretary to the Council.
24th January, 1853.

TO ARCHITECTS.

COMPETITION and other DRAWINGS.—Mr. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen," &c. and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 18, Albany-street, Regent's-park.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 58, Pall-mall, London.

THE FINE ART SUBSCRIPTION GALLERY, for the LOAN of WORKS of ART.—S. and J. FULLER respectfully invite the Patrons of Art to VIEW their SUBSCRIPTION GALLERY for the LOAN of WORKS of ART. Every department will contribute examples to the Collection: Landscape, Figures, Animal, Flowers, Fruit, Architecture, Ornamental and Decorative Designs, and Original Works of the Principal Water-Colour Painters.—N.B. The terms, which have been arranged to meet all classes, will be forwarded, post-paid, to all parts of the kingdom.—34 and 35, Rathbone-place.

QUANTITIES, SPECIFICATIONS, SCHEDULES of PRICES, WORKING DRAWINGS, &c. copied, lithographed, or printed.
PLANS, ELEVATIONS, DRAWINGS of MACHINERY, &c. lithographed or engraved.
BUILDERS' and CONTRACTORS' ACCOUNT-BOOKS; DRAWING PAPERS; ditto, mounted and continuous. TRACING PAPER and CLOTH; ditto in lengths.
GENERAL STATIONERY, for the use of BUILDERS, ARCHITECTS, SURVEYORS, and ENGINEERS, at the lowest current rates.
WATERLOW and SONS, 63 to 68, London-wall; and 49, Parliament-street, London.
Contracts for the supply of large establishments.

BILLS of QUANTITIES.—DAY and SON, Lithographers to the Queen.—Lithograph Bills of Quantities with the greatest despatch, and at a vast saving on the prices generally charged.
Perspectives got up from Geometrical Drawings, either in Outline or Water Colours:
17, GATE-STREET, LINCOLN'S-INN-FIELDS.

TO PAINTERS, PLASTERERS, BUILDERS, AND OTHERS.

100 PER CENT. SAVED by using SMITH'S newly-invented BRAZILIAN PLASTERERS' BRUSH.

This brush, manufactured from the best and finest Brazilian bass, will be found admirably adapted for lime-washing, water-washing, colouring, painting, cleaning paint, fronts, facias, &c. &c. It will perform the hardest and roughest work with the greatest ease and facility, and is, by a novel process in the manufacture, rendered smooth, pliable, and equal to the best of bristle, therefore equally adapted for work the most delicate. It resists all chemical action and all climates. ONE TRIAL ONLY will sufficiently prove it a remarkable saving in time, trouble, and expense.
The Royal Commissioners at "The Great Exhibition" awarded to C. Smith a "Prize Medal," accompanied by flattering testimonials.
Sold retail by all respectable oilmen in the United Kingdom, and wholesale at the Manufactory, Nos. 8 and 9, Osborne-street, Whitechapel.
N.B. None are genuine unless labelled with the Royal Arms, and the Manufacturer's name and address.

WANTED to PURCHASE, together or separately, a good SECOND-HAND FOUR to SIX HORSE-POWER HIGH-PRESSURE STEAM-ENGINE and BOILER; also, a Deal Saw-Frame and Circular Saw-Bench, with all gearings complete and in good condition. State weights and dimensions, and particulars of all, with lowest price for cash delivered on railway.—Address, post-paid, to A.C. Mr. Wilkinson's, Plough Inn, Horncastle.

MACHINERY for SAWING, PLANING, and MOULDING WOOD.—WORSSAM & CO. of Hortulan Works, King's-road, Chelsea, direct attention to the simplicity and economy of their inventions and improvements in the manufacture of the above. An inspection of their stock on hand is requested.

THE BEST MATTING and MATS, of Cocoa-nut Fibre.
The Jury of Class 28, Great Exhibition, awarded the Prize Medal to T. TRELOAR, Cocoa-nut Fibre Manufacturer, 42, Ludgate-hill, London.

TO BUILDERS, HOUSE-DECORATORS, &c.

MESSRS. HILL and SON, of 88 and 89, St. Martin's-lane, Charing-cross, have the most extensive assortment of CLOTHS and PAPERS in every width, quality, and shade of colour, suitable for curtains, covering doors, &c.—Patterns will be sent upon application.

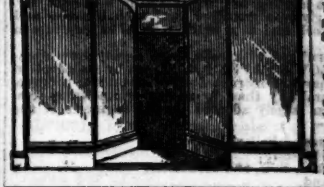
TO ARCHITECTS AND OTHERS.

MR. EDWARD L. PABAIRE is desirous of meeting Gentlemen who require COLOURED ARCHITECTURAL DRAWINGS. External, Internal, Isometrical Perspectives got up; outlines of same neatly coloured, with background, on terms that will ensure approval. Temporary assistance given in getting up Plans, Elevations, Sections, Detail, and Working Drawings.—Mr. E. L. P. makes a consideration in his charge where competition drawings prove unsuccessful.
Address, 8, Rathbone-place.

CHURCH DECORATIONS.—Altar and Communion Cloths, General Church Furniture, Robes, &c. at very reduced prices.
An Illustrated Priced Catalogue may be had by application of the Clergy or Churchwardens.
HARRISON, Church Decorator and Robe Maker, 62, Chancery-lane. Contracts for Church Cushions, &c.

IMMEDIATE ADVANCES, to any amount, for BUILDING PURPOSES, or to purchase freehold or leasehold property, and repayable by fixed instalments, may be obtained, for terms not exceeding fourteen years, from the Church of England and General Permanent Building Society. Shares, 12*l.*; monthly payments, 1*s.*
TRUSTEES.
The Rev. Thomas P. Dale, M.A., F.R.A.S. Sion College.
Samuel Griffiths, Esq. M.D. Wellington-street.
Robert Obbard, Esq. Deputy of the Ward of Farringdon Without.
Apply to the Secretary, Mr. CAMPBELL, at the Offices, 22, John-street, Adelphi; or to J. M. DALE, Esq. 9, Warnford-court, Throgmorton-street, City.

M. late THOMAS WARD, SASH and SHOP FRONT MANUFACTURER and JOINER to the TRADE, 198, Upper Whitecross Street, St. Luke's. Established 1839.



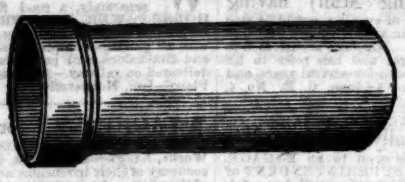
Upwards of 500 good seasoned doors in stock.
Workmanship and Materials of the best description.
Estimates given for every description of work.
By enclosing a penny stamp a full list of Prices will be returned.

PURE PATENT WHITE ZINC PAINT, of the VIEILLE MONTAGNE ZINC MINING COMPANY of BELGIUM.—This Paint is superior in every respect to White Lead, which it surpasses in whiteness and brilliancy; it grows very hard after it is applied, and is therefore susceptible of a very high polish. It is unaffected by sea-water, sulphuretted hydrogen, or any other gases.
WHITE ZINC PAINT having none of the poisonous qualities of White Lead, avoids the dangerous sickness to which workmen, as well as persons inhabiting newly-painted houses, are subject.
The VIEILLE MONTAGNE COMPANY import the Oxide in casks bearing their mark, VM, without which none are genuine, and is to be obtained dry or ground at the Company's Agents at the following places, viz.:—London, Liverpool, Birmingham, Hull, Newcastle, Leith, Glasgow, Bristol, Plymouth, Norwich, Ipswich, Dublin, Cork, Belfast, Jersey, Portsmouth, Poole, and the Isle of Wight; and from Messrs. Blundell, Spence, and Co. Hull. It may also be obtained from the Grinding Agents, Messrs. C. DEVAUX and Co. 63, King William-street, City. Wholesale Agents, Mr. CHARLES JACK, 3, Tottenham-court, New-road, and 30, Upper Thames-street, who sells it in kegs of 14 lbs. 28 lbs. 56 lbs. and upwards, at low rates; and Messrs. R. ANDERSON and CO. Timber-bank, Leith, wholesale and retail.
The Company also employ a painter, who will undertake any description of painting in Zinc by contract.
Since its introduction into the United Kingdom, the Admiralty and the most eminent professional men have given it their preference. The public is cautioned, that if White Zinc Paint is adulterated, it becomes a very inferior paint, and peels and washes off.
For further particulars apply to Mr. H. T. SCHMOLL, General Agent for the United Kingdom, at the Company's Offices, 12, Manchester-buildings, Westminster.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

HURBUCK'S PATENT WHITE ZINC PAINT.—The PERMANENT WHITE of the Ancients, by its costliness hitherto restricted to the use of the artist, is now offered at a less price than the ordinary White Lead. Healthful to the painter and to the occupants of newly-painted rooms, it is permanent for ages, unaffected by vapour from cesspools, or the most noxious gases.
The price per hundred weight is now less than the price of the best White Lead, whilst two hundred weight of this Paint, with seven gallons of oil and turpentine, covers as much surface as three hundred weight of White Lead and twelve gallons of oil and turpentine. It is, therefore, cheaper in the first instance, as well as desirable on every other consideration. To a contractor, for extensive works taken at competition prices, this is important. The saving on the paint is twenty-five per cent. whilst on the oil and turpentine it is equally great.
For painting both the interior and exterior of buildings, and for all ornamental, decorative, and sanitary purposes, HURBUCK'S PATENT WHITE ZINC PAINT has proved to be superior to every other paint known, and equally adapted for all climates.
A circular with full particulars may be had of THOMAS HURBUCK and SON, Colour and Varnish Manufacturers, Upper East Smithfield, London (opposite the London Docks).

THE BARNLEY IRON COMPANY, WORTLEY, near LEEDS.



Manufacturers of FIRE BRICKS, TILES, QUARRIES, &c., White Building Bricks, Fire-clay CHIMNEY-TOPS, in Norman, Egyptian, Saxon, Tudor, Grecian, Gothic, and Elizabethan styles.

TERRA COTTA

Fountains, Vases, Pedestals, Capitals, Trusses, Brackets, &c., in great variety, which for beauty and elegance of design are unequalled. The designs of Architects modelled with the greatest exactness.

Also of

PATENT GLAZED STONEWARE DRAIN PIPES, JUNCTIONS, BENDS, &c., well adapted for pressure, being made extra pressed under "Spencer's Patent." Superior White Glazed CLOSET PANS, TRAPS, &c.

The Works of the Company are situated in the immediate vicinity of the well-known bed of WORTLEY FIRE-CLAY, and their manufacture of BRICKS, for the use of Forges, Gas Companies, Foundries, Potteries, and Glassworks, is confidently recommended for all purposes where extreme heat is required. Their GROUND CLAY is also particularly adapted for the manufacture of CRUCIBLES' MELTING POTS, &c.

OFFICES AND STORES:

LONDON .....No. 14, York-chambers, York-buildings, Adelphi; No 16, Bath-place, New-road; St. Ann's-wharf, Limehouse.
BIRMINGHAM..No. 7, Easy-row; also King Alfred-street, adjoining Bingley-hall, and Lawley-street.
BRISTOL .....No. 14, Nelson-street.
LIVERPOOL ....No. 9, Russell-street, and Shipping-wharf, Leeds-street.
MANCHESTER..No. 45, Travis-street, and 23, 24, and 25, Birmingham-street, London-road.
HULL.....No. 2, Humber-street, and Wellington-street.
BRADFORD ....Houghton-lane, Manchester-road.
LEEDS .....Wellington-street, adjoining the Midland Station; and Shipping-wharf, Victoria-works, Hunslet;

Where Drawings, with Prices, &c. may be obtained.

THE PERMANENT WAY COMPANY beg

to call the attention of Boards of Directors, Engineers, and others interested in railways already made, to the important advantages obtained by FISH-JOINTING the RAILS, as exhibited by the annexed extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly meeting of Shareholders, held on the 25th August. This invention not only saves a large current expense in keeping up the permanent way, but by its causing engines and carriages to run more smoothly, decreases the wear and tear of both the rails and rolling stock, and adds greatly to the comfort and security of the passengers. The importance of making a line of rails as much as possible resemble a continuous bar, and which fish-jointing accomplishes, is increasingly appreciated by engineers. A remarkable instance occurred during the late floods: a train passed safely over some fish-jointed rails that were under water, and it was afterwards found that for some distance the whole of the ballast had been washed away. Had the line been fastened by keys only, there can hardly be a doubt that a serious accident would have taken place. The adoption of this system of jointing on the following lines, proves the estimation in which it is held: and there are other lines on the point of applying it:—

Eastern Counties Railway,
East Indian,
Edinburgh and Glasgow,
Egyptian,
London, Brighton, and South Coast,
London and North-Western,
Midland,
Merionethshire,
North and South Western Junction,
Waterford and Limerick,
York and North Midland,
York, Newcastle, and Berwick,

Extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly Meeting of Shareholders, held on the 25th August.

"The system of fish-jointing has hitherto fully borne out Mr. Ashcroft's reports, as giving a smoother road, with less wear and tear to the rolling stock, and at a much reduced expenditure in maintenance."

For lines not yet furnished with rails, the company draw attention to W. H. BARLOW'S PATENT RAIL, as by its adoption the permanent way may be constructed at the lowest rate per mile, and with greater durability than by any other known system. These rails have been largely adopted by the engineers of the following Railways:—

Dublin and Belfast Railway,
Great Western,
Hereford, Ross, and Gloucester,
Midland,
Midland Great Western (Ireland),
Northern Railway of France,
Newport and Abergavenny,
South Wales,
St. Germains and Versailles,
West Cornwall.

The Permanent Way Company have received gratifying testimonials in favour of this form of rail from I. K. BRUNELL, Esq. C.E., G. W. HEMANS, Esq. C.E. Dublin, and other eminent engineers.

THE PATENT CAST-IRON SLEEPERS of Mr. P. W. Barlow are adapted to double-headed rails of any pattern, and supersede or replace wooden sleepers. They are adopted on the

Londonderry and Coleraine,
East Indian,
Midland,
East Lancashire,
Londonderry and Enniskillen,

and several other lines.

Extract from the Directors' report to the last half-yearly meeting of the Londonderry and Enniskillen Railway.

"The trial afforded by six additional months' working has also confirmed your directors in the favourable opinion expressed by them respecting the Cast-iron Road of Mr. Peter W. Barlow.

"It has fully answered the expectations formed of it, and there can now be no doubt that its adoption, coupled with the lessened wear and tear from the use of light engines, will effect a material saving in the maintenance of permanent way."

The Permanent Way Company confines itself entirely to the granting licenses to use their various patents, which is done upon very moderate terms.

These several systems have been adopted hitherto to an extent of upwards of 600 miles on the above-mentioned railways.

Every information may be obtained by applying to Mr. CHARLES MAY, C.E. 3, Great George-street, Westminster; or to WILLIAM HOWDEN, Secretary, 26, Great George-street.

SPECIAL NOTICE.

To secure the advantage of this year's entry, proposals must be lodged at the head office, or at any of the society's agencies, on or before 1st March.

SCOTTISH EQUITABLE LIFE ASSURANCE SOCIETY.

Incorporated by Special Act of Parliament, 10 Vict. c. 33.

EDINBURGH ..... 26, St. Andrew-square.
LONDON..... 126, Bishopsgate-street.
The Sums Assured exceed £3,780,000
The Annual Revenue exceeds..... 140,000
And the Accumulated Fund 690,000

Large Additions have been made to Policies. For example, a Policy for 1,000l. dated 1st March, 1839, becoming a claim after payment of the premium in the present year, would receive 1,514l.; and policies of later date in proportion.

POLICIES RENDERED INDISPUTABLE.—The Directors have arranged that Policies may, under certain conditions, be declared indisputable on any ground whatever, after being of five years' endurance, and the Assured be entitled to travel or reside beyond the limits of Europe, without payment of extra premium for such travelling or residence.

The next Triennial Allocation takes place on 1st March, 1853, when an additional Bonus will be declared.

ROBERT CHRISTIE, Manager.

*** Medical Referees paid by the Society.

Forms of Proposal, and all other information, may be had (free) on application at the Society's Office, 126, Bishopsgate-street, (corner of Cornhill), London. WILLIAM COOK, Agent.

CLERICAL, MEDICAL, and GENERAL LIFE ASSURANCE SOCIETY.

ADVANTAGES OFFERED.

EXTENSION OF LIMITS OF RESIDENCE.—The assured may reside in most parts of the world, without extra charge, and in all parts by payment of a small extra premium.

MUTUAL SYSTEM WITHOUT THE RISK OF PARTNERSHIP.

The small share of Profit divisible in future among the Shareholders being now provided for, without intrenching on the amount made by the regular business, the assured will hereafter derive all the benefits obtainable from a Mutual Office, with at the same time complete freedom from liability, secured by means of an ample Proprietary Capital, thus combining in the same office all the advantages of both systems.

The Assurance Fund already invested amounts to 850,000l. and the income exceeds 136,000l. per annum.

CREDIT SYSTEM.—On Policies for the whole of Life, one half of the Annual Premiums for the first five years may remain on credit, and may either continue as a debt on the Policy, or may be paid off at any time.

LOANS.—Loans are advanced on Policies which have been in existence five years and upwards, to the extent of nine-tenths of their value.

BONUSES.—Five Bonuses have been declared; at the last in January 1853, the sum of 131,125l. was added to the Policies, producing a Bonus varying with the different ages from 24½ to 55 per cent. on the Premiums paid during the five years.

PARTICIPATION IN PROFITS.—Policies participate in the Profits in proportion to the number and amount of the Premiums paid between every division, so that if only one year's Premium be received prior to the books being closed for any division, the Policy on which it was paid will obtain its due share. The books close for the next division on 30th June, 1856, therefore those who effect Policies before the 30th June next, will be entitled to one year's additional share of Profits over later assurers.

APPLICATION OF BONUSES.—The next and future Bonuses may be either received in cash, or applied at the option of the assured in any other way.

NON-PARTICIPATING.—Assurances may be effected for a Fixed Sum, at considerably reduced rates, and the Premiums for Term Policies are lower than at most other Safe Offices.

PROMPT SETTLEMENT OF CLAIMS.—Claims paid *thirty* days after proof of death, and all Policies are *Indisputable* except in cases of fraud.

INVALID LIVES may be assured at rates proportioned to the increased risk.

POLICIES are granted on the lives of persons in any station, and of every age, and for any sum on one life, from 50l. to 10,000l.

PREMIUMS may be paid yearly, half-yearly, or quarterly; but if a payment be omitted from any cause, the Policy can be revived within *fourteen* months.

The Accounts and Balance Sheets are at all times open to the inspection of the Assured, or of *persons desirous to assure.*

A copy of the last Report, with a Prospectus and Forms of Proposal, can be obtained of any of the Society's Agents, or will be forwarded free by addressing a line to

GEORGE H. PINCKARD, Resident Secretary.

99, Great Russell-street, Bloomsbury, London.

THE GENERAL WOOD-CUTTING COMPANY, TIMBER WHARF, SAWING, PLANING, AND MOULDING MILLS,

Belvedere-road, Lambeth, near Waterloo-bridge,

are prepared to supply timber and deals, &c. cut and uncut, to any extent, at the current prices of the day. They keep a large stock of WELL-SEASONED FLOORING and MATCH BOARDS, which, being manufactured by themselves, they offer at the lowest remunerating profit. Buyers of timber, &c. from the company, will find their extensive saw mills a convenience for the immediate conversion of their purchases to any purpose which may suit them.

The Company beg leave to call the attention of the trade to their NEW MOULDING LIST, the largest ever published, and to state that, in addition to the numerous patterns therein delineated, their machinery enables them to execute every description of mouldings, from drawings, &c. with an accuracy and despatch which must insure satisfaction.

The moulding list, containing nearly 300 diagrams, with prices attached, may be had at the mills, or shall be forwarded on receipt of six postage stamps (the amount of the postage thereon).

SEASONED FLOORING PLANED to a

parallel width and thickness by improved patent machinery, at very reduced prices, as under:—

	Per square.		Per square.
½ inch yellow	12s. 0d.	½ inch white.....	12s. 6d.
¾ " "	14 0	¾ " "	14 0
1 " "	16 0	1 " "	15 6

2½ per cent. discount allowed off amounts exceeding twenty pounds. Also timber, planks, deals, battens, scantling, sash-cills, &c. at equally low prices. Delivered free to any railway station in London. Terms, cash.

ARCHBUTT and ATKINSON, St. Pancras Saw-mills, Cambridge-street, Old St. Pancras-road, close to the Goods Terminus of the Great Northern Railway.

By Her Majesty's Royal Letters Patent.

TO BUILDERS AND OTHERS.

SEASONED WOODS by the Patent Desiccating Process for SALE, at R. I. FULLER'S Depôt, 27, Wharf-road, City-road. Spanish and Honduras Mahogany, Wainscot, Hornbeam, Limetree, Birch, Beech, and Veneers. Flooring and Match Boards, &c.

REDUCED PRICES.—EDWARD SIMMS

(late William Cleave), of Wilton-road, Pimlico Basin, begs to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¼ inch to 1¼ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.

A LARGE ASSORTMENT of WELL-

SEASONED, DRY, PREPARED WHITE and YELLOW BATTEN FLOORING, also a large quantity of SCAFFOLD POLES, FOR SALE, at a low price, at DEUCE'S, No. 9 Wharf, Queen's-road West, Chelsea. Bricks, Lime, Cement, Sand, Plaster, Slates, and Slate Slab, Tiles, &c. on Sale at the lowest remunerative prices. Goods landed and carted. Ladders for sale. Apply to H. P. DIXON and CO. as above. Great facilities for the prompt execution of country orders.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANKS, DEALS,

and BATTENS, &c., sawn on the most approved principle; Boards, &c., prepared, matched, and grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks, and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills, Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

DURRAND'S "BONDED and SUFFER-

ANCE WHARF," TIMBER-PRESERVING WORKS, ROTHERHITHE.—BETHELL'S process consists in preparing timber with creosote, or oil of tar, and is particularly applicable for Railway Sleepers, Bridge Timber, Telegraph Posts, Piers, Docks, Harbours, &c.; and the Outside Planking of Ships and Barges. And also for use in the colonies, as being perfectly impervious to the attacks of all land or marine insects. PAYNE'S, Sir W. BURNETT'S, and MARGARY'S processes, in addition to their preservative properties, are likewise non-combustible, and are, consequently, adopted in her Majesty's Dock Yards, as a preventive of fire in Ship Building; and are also extensively used in House, Farm, and general Building.

Extensive and most complete Machinery for the application of the above processes has been erected on these premises, which, being close to the great Timber Depôt of the Docks, are advantageously situated for land conveyance, or re-shipment; and from possessing Sufferance Privileges, are, consequently, equally applicable for Colonial and Foreign Trade.

Scale of charges and every particular of P. ST. QUINTIN, Superintendent, on the Wharf; or at Mr. BURT'S Office, 2, Charlotte-row, Mansion-house, City.

STEPHENS'S LIQUIDOAK, MAHOGANY,

and SATIN WOOD STAINS, for staining various sorts of Inferior Woods, so as to give them the appearance and character of the more costly and ornamental kinds. In the BUILDING and DECORATING CHURCHES, where it is desirable to give to the cheaper kind of woods the appearance of antique Oak, or to make Deal assume the character of Oak Panelling, whereby the effect of the more costly may be produced by the use of a cheaper material, these stains will be found more effective than any means hitherto employed. For the exposed Timbers of the inside of the Roofs of Churches, by brushing them over with the Stain, which operation is very rapidly, and of course economically effected, the appearance of an oaken roof will be produced. For colouring the backs of the seats, pews, the fronts of galleries, the pulpit, &c. it is equally advantageous.—Prepared by HENRY STEPHENS, and may be obtained at 54, Stamford-street, and at the Office of "The Builder," at both which places may be had the proper Varnish and Size, with directions for use.

STAINING DEAL TO IMITATE ALL

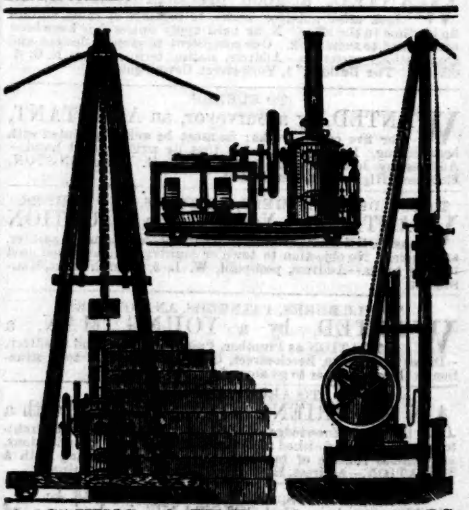
KINDS of WOODS. It requires NO SIZING, and will stand the exposure to the weather. Price 6s. per gallon. Varnishes for W. NAYLOR'S Stains may be had at the Factory, 57, James-street, Oxford-street.

TO BE SOLD by PRIVATE CONTRACT.—

WILLOW and POPLAR TIMBER, of large dimensions (40 to 100 feet each tree), as now standing on Sturmere Hall Estate.—For particulars apply to the Bailiff, or Mr. PURKIS, Sturmere Hall, Halstead, Essex.

TARPAULINS for COVERING ROOFS

during Repairs. SCAFFOLD CORD and every description of ROPE used by Builders upon the lowest terms. Marquees and temporary Awnings on sale or hire. Orders per post receive the most prompt attention.—WILLIAM PIGGOTT, 115, Fore-street, City, Manufacturer, by appointment, to her Majesty's Honourable Board of Ordnance.



A SAVING of TIME and MATERIALS

with solidity of Building.

NATHAN GOUGH'S PATENT PORTABLE STEAM-ENGINES of two, three, four, and six-horse power, for grinding mortar, raising building materials, driving piles, circular saws, pumps, &c. 46, Albert-street, Manchester.

TESTIMONIAL

From the Trustees of the Birkenhead Docks.

"Engineer's Office, Dock-yard, Birkenhead, 21st July, 1851.

"Nathan Gough, esq.

"Sir,—I have much pleasure in informing you that the three-horse engine which you have placed in the Caisson for pumping, answers its purpose admirably, doing its work much better than seventy men could accomplish. From its portability and lightness, it is peculiarly adapted for such a purpose.

"I am, Sir, your obedient servant,

"JAS. ABERNETHY."